CHESS

by Wikibooks contributors



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Cover: Chess pieces – left to right: king, rook, queen, pawn, knight and bishop. Photo taken by Alan Light.

The current version of this Wikibook may be found at:
http://en.wikibooks.org/wiki/Chess

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1 Playing The Game

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Overview

Chess, unlike many other games, does not involve chance. It does not hinge on the roll of dice or which card is drawn. The outcome completely depends on the decisions of both the players. However, because of its vast complexity, the far-reaching consequences of some decisions are practically unforeseeable.

One player ("White") has the white pieces while the other ("Black") has the black pieces. In friendly games the choice of colors can be made by any method, such as flipping a coin - if there is no coin at hand, another typical way of deciding would be to conceal a black piece in one hand and a white piece in the other and ask one's opponent to select a hand, the colored piece selected will be the opponent's color. In competitive games the players are assigned their colors.

Order of play

Once all the pieces have been arranged, White makes the first move. White *always* makes the first move; this is important for notation, and any chess player will insist upon it. After White has made their move, Black will then make a move. The gameplay will continue in alternating fashion, White making a move, followed by Black.

General movement rules

- A move consists of moving a single piece, in accordance with its rules of movement, to a square that is unoccupied or occupied by an enemy piece.
- If a piece is moved onto a square occupied by an enemy piece, the latter piece is removed from play and the first piece replaces it. The removed piece is said to have been *captured* or *taken*.
- With the exception of the knight, no piece may make a move to a non-adjacent square unless all the intervening squares are vacant (pieces may not 'jump over' other pieces).
- No player may make a move that leaves their king in check (see below).

There are some exceptions to these rules, where a player's turn can consist of two pieces moving (castling), where a piece moves to an unoccupied square but still captures (en passant capture), or where a piece moves to a square and becomes a different unit (promotion), all of which are covered below.

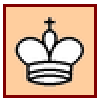
The board

Traditionally, the game is played on a board of 64 alternating black and white squares turned with a white square to each player's far right. "White on right" is a helpful saying to remember this convention. The light and dark squares on the chessboard and the light and dark chess pieces are traditionally referred to as "white" and "black" respectively, although in modern chess sets almost any colors may be used. The horizontal rows of squares are called ranks and are numbered 1-8; the vertical rows of squares are called files and given the letters a-h.

The pieces

The movement of the individual pieces is described below. In all the board diagrams shown, the squares to which the piece in question can move are indicated with x's.

King

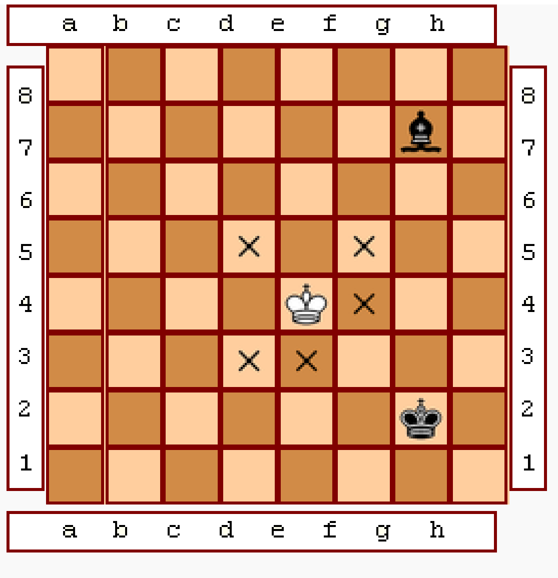


The king can move one square at a time in any direction, with certain restrictions.

The king is the most important piece belonging to each player, though not the most powerful. If a player moves a piece such that it threatens to capture his opponent's king, that king is said to be in *check*. If a player's king is in check, he must immediately remove the check by moving the king, blocking the check with another piece, or capturing the checking piece. As mentioned above, players may not place their own king in check; however, they may check their opponent's king. Two kings may never occupy adjacent squares, since they would have put themselves in check by moving there.

If the king is placed in check and cannot escape, it is said to have been *checkmated* (or "*mated*" for short). The first player to checkmate the opponent's king wins the game. Note that the king is never actually captured, since it is obliged to move out of check whenever possible (and the game ends when it is impossible).

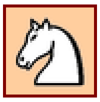
The White king in the following diagram cannot move upwards or to the left since it would be in check from the bishop, or diagonally downwards which would leave it adjacent to the Black king.



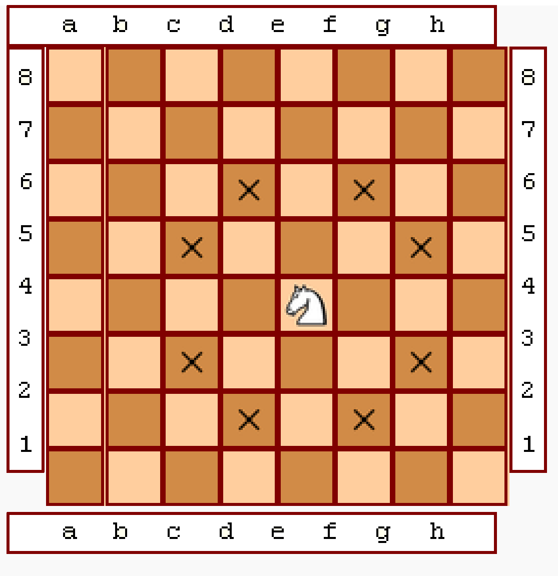
Capturing Pieces

The king may capture any opponent's piece adjacent to it, as long as doing so does not place himself in check.

Knight



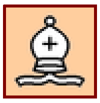
The knight has a unique L-shaped move; two squares in one direction either horizontally or vertically, and one square in another direction perpendicular to the first. The knight is the only piece that may jump over other pieces.



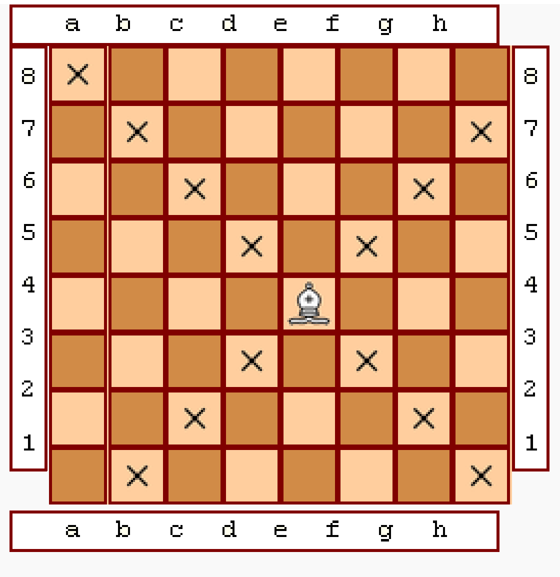
Capturing Pieces

The knight captures any opponent's piece that it lands on during its L-shaped move.

Bishop



The bishop can move any number of squares diagonally. Each side starts the game with one light-squared bishop and one dark-squared bishop. Note that the bishop is restricted to the color of squares on which it began. For example, the bishop in the following diagram stands on a light square, and can only move to other light squares.



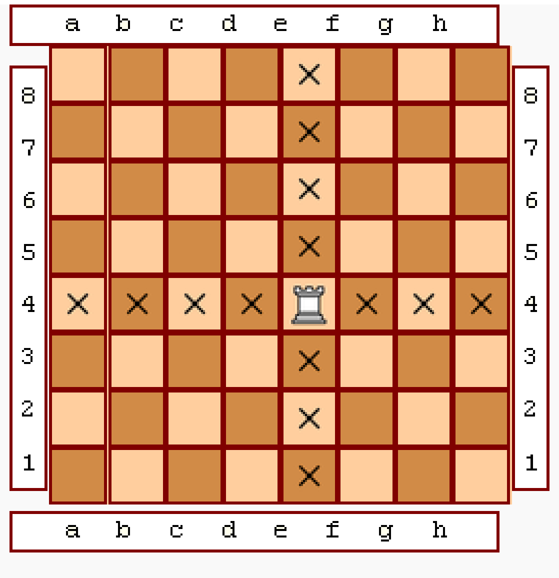
Capturing Pieces

The bishop may not jump over any piece of either color. It captures any opponent's piece that it encounters during the movement described above, and then occupies the captured piece's square.

Rook



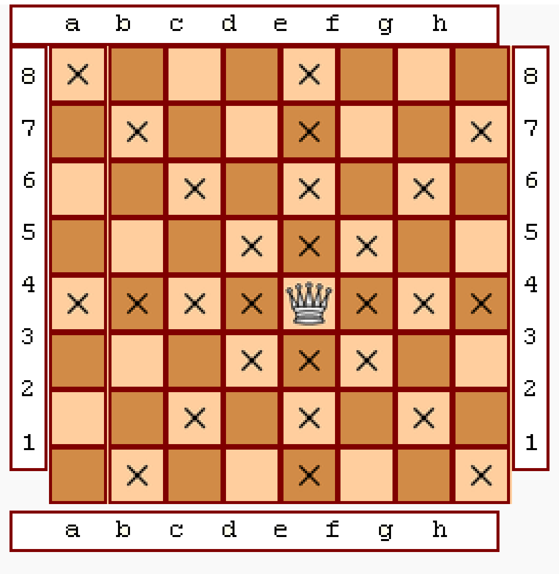
The rook can be moved any number of squares horizontally or vertically, but not diagonally.



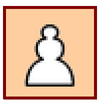
Queen



The queen is the most powerful piece, being able to move any number of squares in any lateral or diagonal direction. It is best described as the combination of a rook's and bishop's movement capabilities.

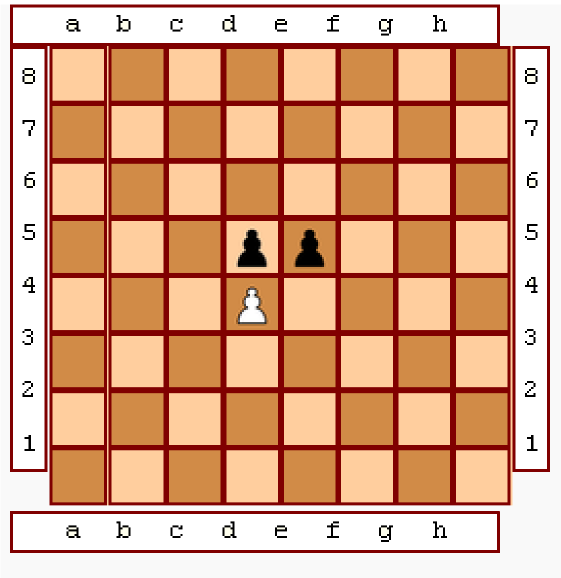


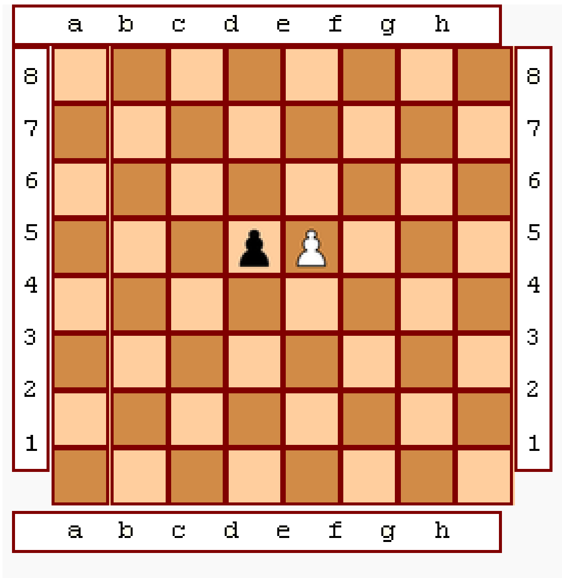
Pawn



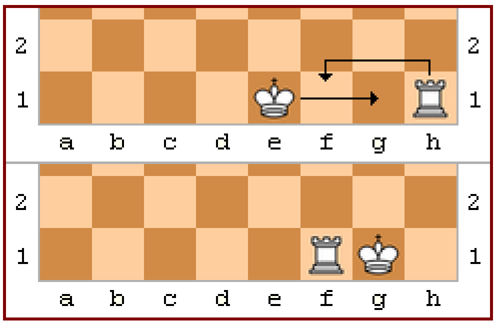
Pawns can move one square straight forward, or optionally and on their first move only, two squares straight forward. The pawn can move one square diagonally forward to capture a piece, but cannot capture a piece by moving straight forward. For this reason, two opposing pawns on a file may become blocked by each other. If a pawn makes it to one of the eight squares along the far edge of the board from their initial position, the pawn is promoted. A promoted pawn is replaced, as part of the same move which brought it to the promotion square, with a knight, bishop, rook or queen of the same color which need not be a previously captured piece. Thus a player can acquire two queens (or up to nine, if he so desires, since there are eight pawns to promote).

In the diagram below the White pawn is prevented from moving forwards by the Black pawn immediately in front of it which it cannot capture, but it captures the other Black pawn by moving diagonally forwards.

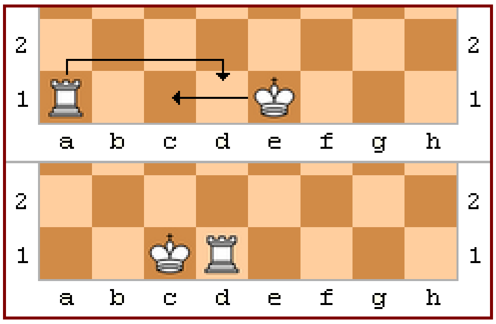




Special moves



Kingside castling: O-O



Queenside castling: O-O-O

Castling

Castling is a move involving the king and either of the rooks. Castling performed with the king's rook is kingside castling, performed with the queen's rook it is queenside castling.

Subject to restrictions detailed below, a player may move his king two squares towards the rook, and subsequently, *on the same turn*, move the rook to the square over which the king has just passed.

The king must be the first piece moved; not the rook. If the rook is moved first, then the king must stay where it is. This mainly applies in "strict rules of chess" where if a piece is touched, it must be moved.

The restrictions specific to castling are:

1. Neither the king nor the participating rook may have moved previously
2. The king must not be in check at the start of the move, though it may have been in check previously in the game
3. The square over which the king passes must not be under attack ('in check') from an enemy piece
4. The squares between the king and rook must be vacant

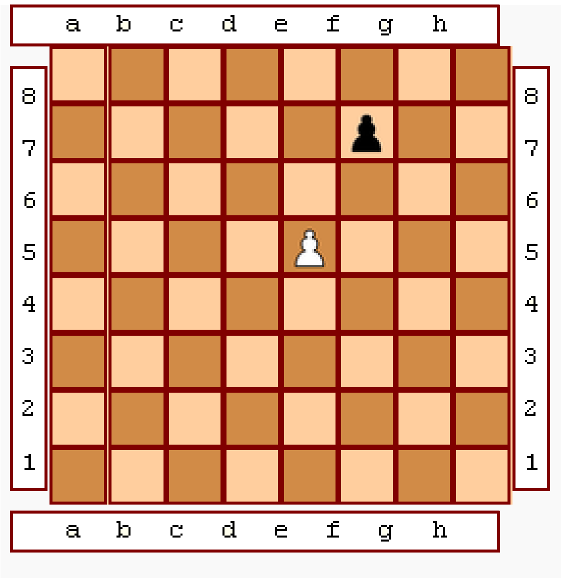
And as with any move, the king may not place itself in check.

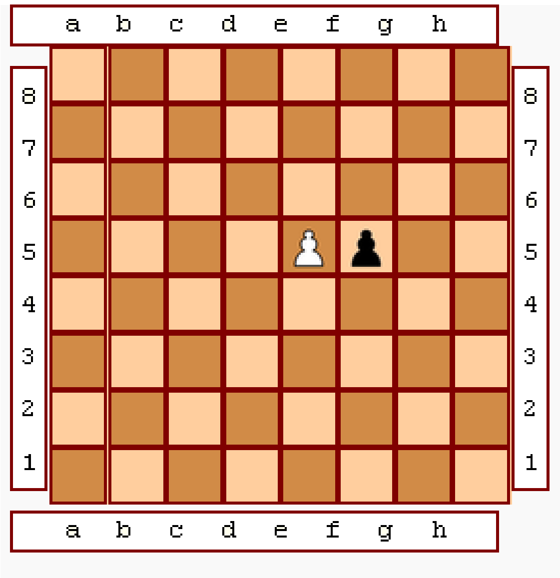
En passant capture

This is French for "in passing"; basically, you capture an enemy pawn as it is passing you.

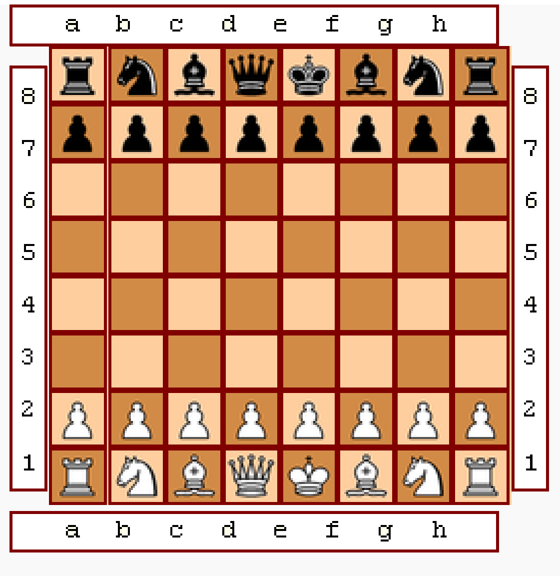
When a pawn advances two squares onto the same rank as an opposing pawn on an adjacent file, this opposing pawn may, on that player's next move only, capture the advancing pawn as though it had only moved one square (provided the move is otherwise legal). The pawn's ability to move two squares on their first move was a relatively late addition to the game of chess. En Passant was introduced to prevent abuses of the new rule.

In the following example, the Black pawn advances two squares, and is captured by the White pawn which moves diagonally forwards and to the right (as if the Black pawn had been there). This move is only allowed on the turn in which the option is presented.





Initial position



In the initial position each side has eight pawns, two rooks, two knights, two bishops, a queen and a king arranged as shown in the diagram below. Note that the only pieces on either side which can initially move are the pawns and knights.

Beginners usually set up the board incorrectly; it is a complex position to remember. The following anectotes may help you remember where the pieces go.

- **White on the Right** It is important that the bottom-right-hand square is light-colored.
- **Knights live in castles** One knight is placed next to each rook (rooks look like the

towers of a castle.)

- **Queens on their color** The White Queen goes on a White Square, Black Queen goes on a Black Square
- **Bishops are advisers to the Royalty** Bishops surround the King and Queen.
- **White King on the Right** From the White Player's perspective, both Kings are on the right, and from the Black Player's perspective, the Kings are on the left.

Conclusion of the game

Play continues to alternate between White and Black until one of the following outcomes is reached:

- One player's king is checkmated. The game is lost by that player.
- In a competitive game, one player runs out of time. The game is lost by that player.
- One player resigns, which is equivalent to quitting the game. A player may resign on either his or his opponent's turn. Resignation is often symbolized by the resigning player knocking down his king.
- The player whose turn it is is in *stalemate*, meaning that he has no legal move and is not in check. The game is a draw.
- The players agree to draw the game. Either player may offer a draw to his opponent upon completion of his move. If the offer is accepted, the game is drawn. Draw offers cannot be rescinded.
- A player successfully claims that the game is a draw under one of the following criteria:
    - His opponent does not have sufficient pieces to checkmate him by any legal sequence of moves.
    - 50 moves have been played by each player since a piece was captured or a pawn moved.
    - The current position has occurred twice before with the same player to move.

Chess Etiquette

Generally, chess games at tournaments are conducted under the following rules:

- **Touch move** - If a player touches a piece he must move it. If he places a piece on a square, he must move it to that square. If you need to center a piece on its square, it is traditional to say *j'adoube* (I adjust).
- **Be silent when your opponent is on the move** - You can only adjust pieces, offer a draw, or claim a draw when it is your turn to move.

A friendly game may be played any way that is mutually agreeable. Generally it is considerate to avoid distracting your opponent.

Glossary

- **Capture** - To move one's piece into the same square as one of one's opponent's pieces.
- **Check** - The king is 'in check' when it is being attacked by an enemy piece.
- **Checkmate** - The player whose turn it is can make no legal move and the king is in check.
- **Stalemate** - The player whose turn it is can make no legal move, but the king is not in check.

2 Notating The Game

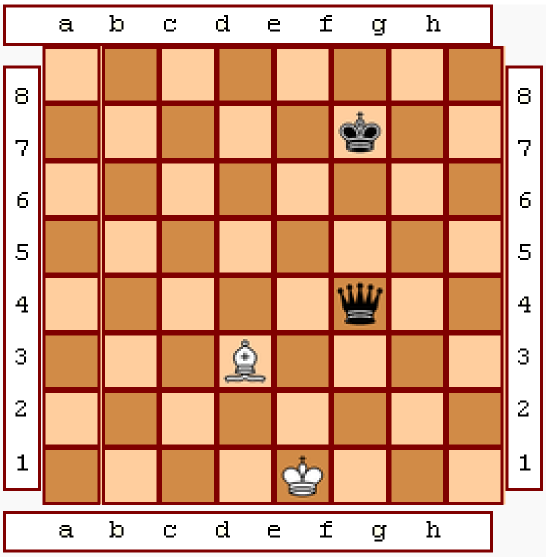
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Writing the game down is of importance to the chess student, as it allows review of game strategy of the student as well as others' play.

Algebraic notation

There are many older systems of writing down chess games, but the current standard, which will be introduced here, is **algebraic notation**. Let's look at a sample game in progress to get a feel for this system.

Say we have the following game (which has proceeded for a while)



Simple Game

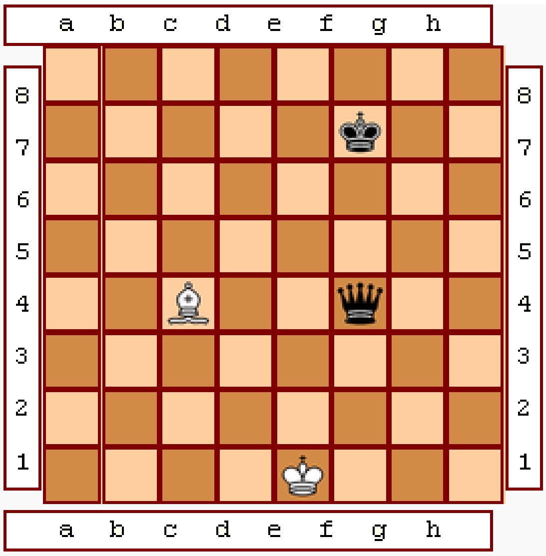
Each square is uniquely identified in algebraic notation by a coordinate comprising a letter and a number. These letters and numbers are displayed along the borders of the above diagram. For example, the square in the bottom left corner of the board is a1, and the square in the top right h8. The White king is on e1 and the Black king on f7.

It is White's turn to move. White decides to move the d3 bishop to c4 in order to check Black's king. Let's suppose this is White's 30th move. So we can write

30. Bc4+

(Note that in some books you may see instead of the letter B a stylized icon of a bishop - the notations however are equivalent) This means that on White's 30th move, a bishop has been moved to the square c4. Because there is only one bishop that could move to c4, we don't need to write

where that bishop came from. The + signifies the check. A # signifies checkmate. In older works, a ++ signified checkmate.



Simple Game

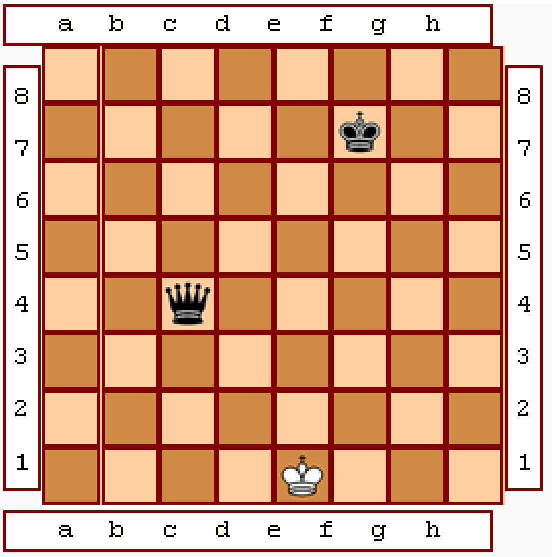
White's bishop is now, unfortunately, in the Queen's line of fire. Black decides to capture it. So for the Black's 30th move, we can write

30... Qxc4

This means that on Black's 30th move, a queen has been moved and captured (which the *x* signifies) the piece at c4. When Black's move is written separately from White's, three dots are placed between the number and the move thus: **30...Qxc4**. Sometimes, the capture is designated with a : instead, thus: **Q:c4**, or even rarer: **Qc4:**

(You may see in some chess books symbols such as ??, ?, ! or !!. These are like side comments - question marks signify potentially poor moves, and exclamation marks signify good ones. !? may signify an unclear move. Since White's move was rather poor, we could write 30. Bc4+? Qxc4 to say that White's move was poor.)

Now the board looks like this.



Simple Game

White is in trouble now, and decides to start to flee to f2. We can write

31. Kf2

for such a move. If Black's queen decides to check White's king at this point, by moving the queen to c2, we write

31... Qc2+

Annotation shorthand

If a move is followed by a ! then this indicates that the move was surprisingly good at times. If followed by a ? then this indicates that a move was questionable or of poor strategy. !! and ?? mean the same, with greater emphasis. A !? marks an interesting move that may be sub-optimal, and a ?! marks a dubious move that may not be possible to refute.

1-0 signifies a win for white, 0-1 a win for black, and 1/2 a draw. = indicates positional equality between the players, +/– means that white is considered to have the advantage, and –/+ indicates an advantage to black.

Sometimes moves can be ambiguous - that is, two pieces of the same designation can move to one square. In that case, it is customary to specify which piece moved there by designating the file alone if it identifies which piece is used. If the file is not enough to identify the piece, then the file and rank are both written in. This can be done with parentheses or without.

Special moves

- Castling is designated by either 0-0 or 0-0-0, depending on whether castling occurred kingside or queenside, respectively.
- En passant capture is designated by the suffix *e.p.* if there is ambiguity.
- Promotion of a pawn is denoted by the original move, with the designation of the piece the pawn became at the end. Check or !/? designations are placed after the name of the new piece.

Designations

The designations for each of the pieces are:

R for rook (castle)
N for knight
B for bishop
Q for queen
K for king
No capital letter for pawn.

Descriptive Notation

An older form of notation you will run into quite frequently is the descriptive notation. It is useful to know because older books use it.

In this form, instead of the files being a, b, c etc., they are Queen rook (QR), Queen Knight (QN), Queen Bishop (QB), Queen (Q), King (K), King Bishop (KB), King Knight (KN) and King Rook (KR). The ranks are labeled from your point of view so that the square e4 (in algebraic) is White's K4 and Black's K5.

To record the moving of a piece, you write the piece, and to where it moves. 1. P-K4 means move a pawn to the 4th rank in the King's file. N-QB3 means move your Knight to the third rank in the Queen's Bishop file. To take you specify the piece taking, and the piece to be taken. QRPxN means pawn in the Queen Rook file takes Knight. Excessive notation is left out so that if only one pawn could legally take a Knight the move is recorded as PxN.

In order to compare the two systems let's look at the same game in both algebraic and descriptive notation

Algebraic

1. e4 e6
2. d4 d5
3. Nc3 Bb4
4. Bb5+ Bd7
5. Bxd7+ Qxd7

6. N(g)e2 dxe4
7. 0-0

Descriptive

1. P-K4 P-K3
2. P-Q4 P-Q4
3. N-QB3 B-N5 (Note here that only one bishop can go to a QN5 so it is unnecessary to specify the Queen Knight file rather than the King Knight file)
4. B-N5ch B-Q2 (check is given by ch)
5. BxBch QxB
6. KN-K2 PxP
7. 0-0

Coordinate Notation

A different type of notation uses only the squares that the pieces were on to denote movements. For example, to denote the earlier 7 moves, the following notes are shown:

1. e2-e4 e7-e6
2. d2-d4 d7-d5
3. b1-c3 f8-b4
4. f1-b5+ c8-d7
5. b5xd7+ d8xd7
6. g1-e2 d5xe4
7. 0-0

ICCF numerical notation

This notation is international because it does not depend on piece names or specific alphabets. A move is denoted by the file, then rank, of its starting square (from 11 at the White queen's rook square to 88 at the Black king's rook square). 1. e4 is denoted 5254. Castling is denoted by specifying the king's two-square move, and pawn promotion with a fifth number specifying the new piece (1=queen, 2=rook, 3=bishop, 4=knight).

3 Tactics

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Guarding

When one of your pieces is placed so that it attacks a square occupied by another of your pieces, the first piece is said to be guarding the other. When your opponent captures the guarded piece, you can recapture with the guarding piece. Note that if you have a piece that is pinned to your king by an opposing piece (see below for a description of pins), it cannot be said to be guarding anything, since it is unable to move or capture.

Batteries

Batteries are formed when two or more pieces work together. The most common kind of battery is the doubling of rooks on a file. Other batteries can be formed by rook-queen or bishop-queen.

A triple battery can be constructed with the queen and both rooks. It is often advantageous to place the queen behind one or both rooks.

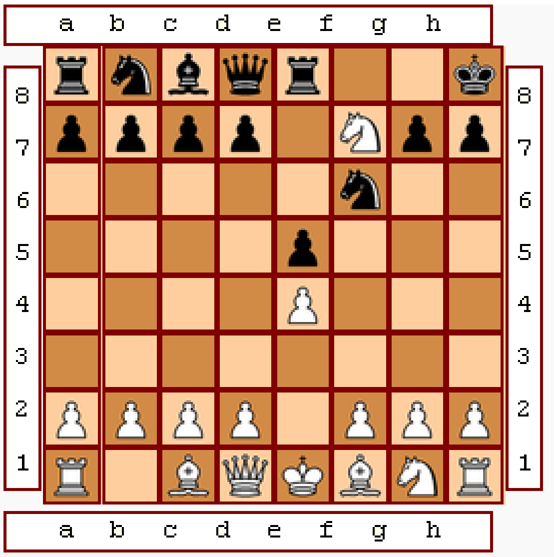
The Exchange

In pretty much any game, a player will have the opportunity to take one of his opponents pieces in exchange for one of his own pieces. This should however NOT be done for its own sake! Initiate an exchange only when it benefits you. Benefits can include, but are not limited to:

- Material advantage - queen for a minor piece, queen for rook, rook for a minor piece, a piece for a pawn or two, etc.
- Doubling pawns - Take when taking back means the doubling (or tripling) of your opponent's pawns on the same file.
- Opening up the king's defenses - Take when taking back means moving a pawn that exposes the king.
- Removing a defender - Take when the piece being taken is providing an essential service for the opponent.
- Blunting an attack - When you are being attacked, often a well timed exchange will leave your opponent with too few pieces to keep up the attack.
- Gaining space - In a cramped position, having more pieces can actually be a disadvantage because the pieces get in the way of each other. If your opponent has a space advantage, exchanging pieces can lessen the advantage and make the resultant less confining.
- Improving a material advantage - if you are ahead material, exchanging pieces will usually benefit you (note - pieces, NOT pawns). Similarly, if you have an extra pawn, trade

pieces that may otherwise be used as a sacrifice to prevent pawn promotion.

Forks



The Royal Fork

Sometimes a piece can be in position to attack two enemy pieces at once. This is called a **fork**. All pieces can fork, even pawns, but knights have a reputation for making especially vicious forks because they can jump over other pieces.

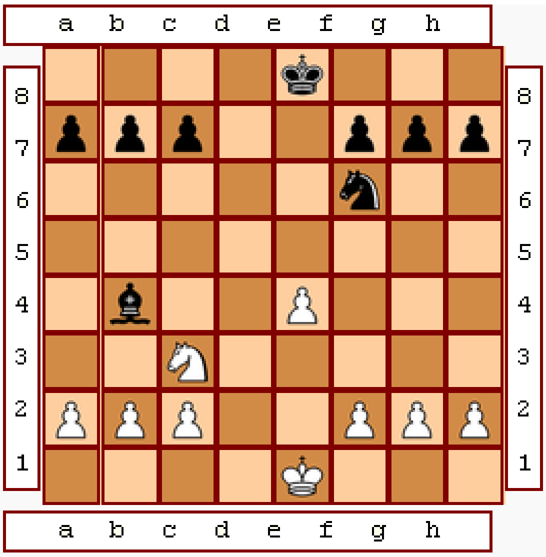
Forking with check

Forks on unthreatened squares which attack the king are the most powerful. The opponent must then move his king to safety and the other piece in the fork has no chance of escape.

The Royal Fork

A *royal* fork is one involving both your opponent's king and queen. In the example shown here, white's knight on f7 has engaged black in a Royal fork. Black will be down the exchange of a queen for a knight.

Pinned pieces

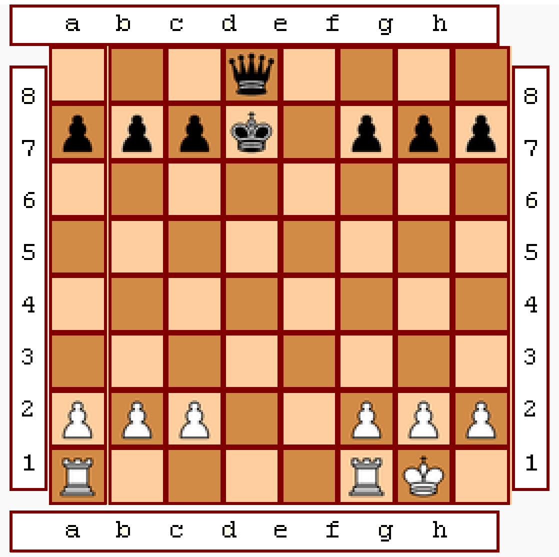


The white knight pinned by the black bishop

A pinned piece is a piece that cannot move because it would expose an attack on an important piece by one of the opposing pieces, such that the capture of the important piece would result in material gain by the opponent. A very useful device is to pin the opponent's pieces to his king; this is known as an *absolute pin*. For example, imagine white's king on **e1**, a white knight on **c3**, and **d2** empty. Black now moves his dark-squared bishop to **b4**. The white knight is now pinned and cannot move. A pawn on **e4** is no longer guarded by the knight, which could not capture a black piece taking this pawn.

In contrast to the absolute pin, a *relative pin* occurs when one player's piece is pinned to one of lesser value than the king, such as a queen or rook. If the benefit of moving the pinned piece outweighs the loss of material occasioned by the capture of the exposed piece (for example, if a forced mate may be achieved), then the pin can be disregarded and the pinned piece moved.

Skewers



Skewer about to happen

A skewer is similar to a pin, but it is in a sense more powerful. Black has, in a blunderous moment, placed his king on **d7** in front of his queen on **d8**. White may now triumphantly slide his rook (either one) to **d1**, skewering Black's king and queen. Since Black cannot block the check, the king has to move, exposing the black queen to the attack of the white rook.

Discoveries

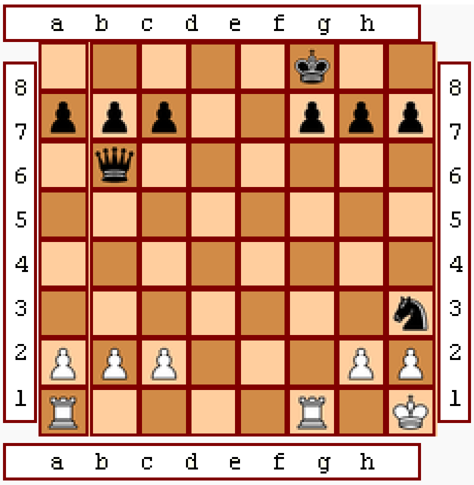
A discovery is an attack on an enemy piece which is unveiled by moving one of your pieces. The power of discoveries is that two targets can be attacked simultaneously. If combined with a check they can be lethal.

Removing the defender

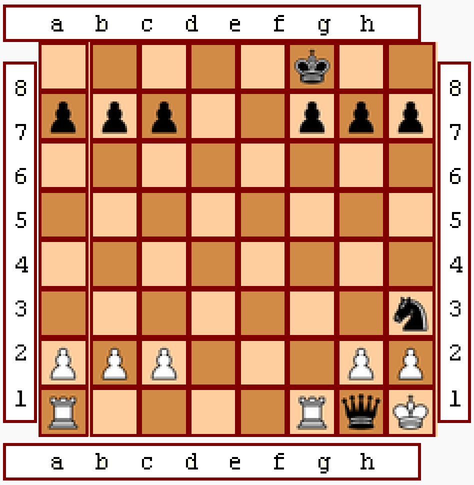
By first capturing, threatening, or pinning a piece that guards another, you might be able to capture the other piece for free.

Sacrifices

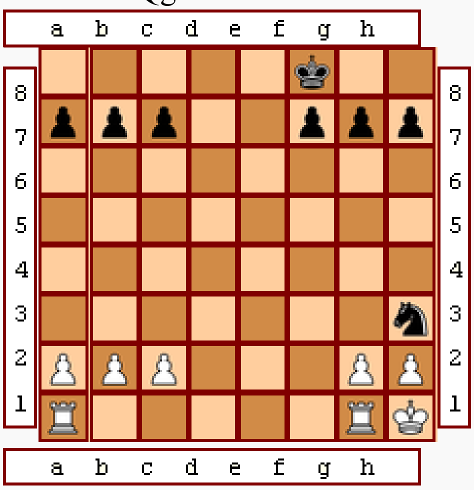
A sacrifice is an exchange of a piece for a non material advantage:



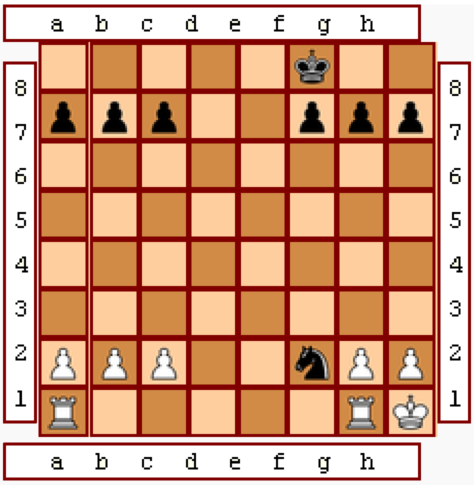
After 1. Kh1



After 1. ... Qg1



After 2. Rxg1



After 2. ... Nf2#

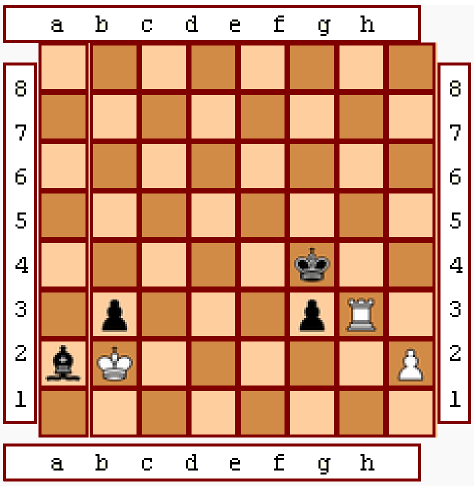
In the first diagram, White just moved **1. Kh1** to get out of check.

Black sacrifices his queen with **1...Qg1** for a winning positional advantage - White is in check and can not take with his king because the knight guards the queen.

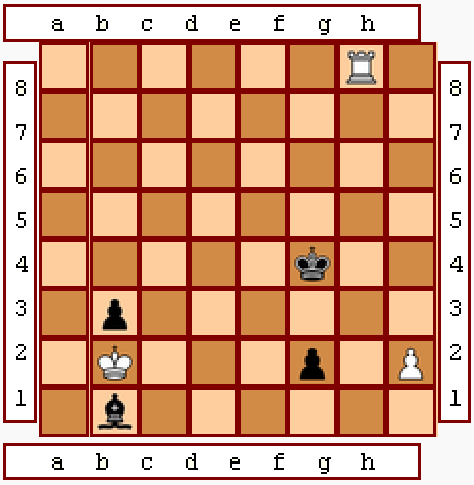
2. Rxg1 - forced - this smothers the king - he cannot move because his own pieces are on every square he could go to - any check on an unguarded square now is mate.

2...Nf2# Checkmate. This queen's sacrifice was also an example of a smothered mate.

In-between moves



Before 1... f2



After 2... Bb1! (white resigned)

An in-between move or *Zwischenzug* is one that is made unexpectedly in the midst of a sequence of moves. But not just any series of moves, one in which the player falling for the Zwischenzug feels the sequence is forced, while his opponent demonstrates to him that it certainly isn't! Most commonly these fall in between trades where a recapture seems to be the only proper means of play.

Such in-between moves often have a surprising and pleasing effect of increasing the potency of a combination beyond the opponent's expectations.

Borisenkov-Mezenev (diagram, Black to play), went **1... f2**, threatening to queen, which White countered with **2. Rg8**, intending **3. Rf8+**, and **4. Rxf1**. But White resigned after the zwischenzug **2... Bb1!** which allows Black to queen (**3. Kxb1 f1Q+** or **3. Rf8+ Bf5**).

4 Strategy

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Material

Having more material on the board than your opponent means you have more options available. You have more opportunities to attack, more pieces to defend and will usually control more of the board. Not all pieces have the same material value, however, so figuring out who has a material advantage is not as easy as simply counting the white and black pieces on the board.

In general, the kings do not count when calculating a material advantage because your opponent is guaranteed to also have a king and any attack on the king MUST be answered. You can't trade a king for a rook, for example.

There is a lot of discussion about exactly what a piece is worth, but a reasonable place to start is as follows:

Letting the pawn be the basic unit of value, you have the following relative values:

- Pawn = 1
- Knight = 3
- Bishop = 3
- Rook = 5
- Queen = 9

While the king's true value is infinite, in terms of its strength as an attacking piece in the endgame it is generally reckoned to be stronger than a knight or bishop but weaker than a rook. Clearly king activity is vital in an endgame.

From this we can generalize that trading a bishop for a knight is not usually harmful, but trading a bishop for a rook is. We also see that trading a queen for 2 rooks is a good trade for the side giving up the queen.

That being said, there are several things to consider when looking at the material strength of any particular game:

In the end game, pawns gain strength as they advance because they pose the threat of queening, so a pawn on the 6th or 7th rank is worth significantly more than a pawn on the second rank - often as much as a piece. However, in the opening and middlegame, an advanced pawn is less likely to queen and more likely to be in need of being defended. It is also unable to defend the center and often leaves "holes" in your territory that can serve as outposts for your opponent's pieces. An overadvanced pawn is then often a liability.

In the opening and middle game, pawns in the center of the board block paths and support outposts. So they tend to be more valuable than end pawns. However, in the end game, a wing pawn

is usually the hardest to get to and block or capture and is therefore more likely to queen. So in the endgame, the edge pawns are often more valuable than the middle pawns (Note: this is not necessarily true in some basic pawn and king endings, where a pawn on the edge leads to only drawing options).

A passed pawn has only pieces stopping it from queening, so it is considered more valuable - especially if it is protected with other pawns.

Games are considered open, closed or semi closed based on whether the central pawns have been captured or not. An open game is one where the central pawns are gone leaving long paths from one side of the board to the other through the center. Bishops need long paths to reach full strength, whereas knights shine when the board is cluttered because they can "jump" over pieces. So in general, Bishops are stronger in open games and knights are stronger in closed.

Knights are more powerful if they have a safe outpost in enemy territory - a knight on the 6th rank that can not be attacked by opposing pawns can be as powerful as a rook in the right circumstances.

A bishop never leaves its own color, so if one of the bishops is captured, half the board is now out of reach of a bishop. So trading 1 bishop for a knight tends to favor the person losing the knight, who is left with two bishops. However, trading the second bishop isn't quite so hurtful. So trading a Bishop for a Bishop where one side has only 1 bishop to begin with helps the side with fewer bishops.

Knights can not cover both sides of the board at the same time, while a bishop can, so in an endgame where there are pawns on both sides of the board, the bishop is stronger.

Bishops can not attack pawns that are on the opposite color, while a knight can. Furthermore, in a game where there is a short pawn chain, a knight can stand at the head of the chain and attack the pawn supporting it, so a knight is often more effective attacking pawns as long as they are limited to one side of the board.

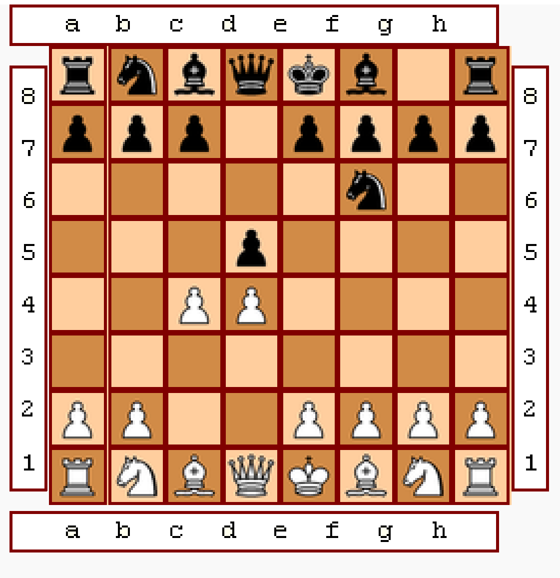
Usually more pieces are more valuable -- two bishops beats a rook, two rooks beat a queen -- but this is conditioned on proper co-ordination between the pieces. It may be worthwhile to sacrifice two pieces for a rook if this results in long-term damage to the enemy's piece co-ordination. Usually this means tying down the extra pieces to the defence of weak pawns, so that they cannot co-operate in attacking friendly pawns.

Tempo

Tempo is the effective number of moves required to reach the position on the board. Moving a piece twice to reach a position it could have reached in one results in a net loss of one tempo - moving a piece back to its starting place usually results in a loss of all its tempo - unless other pieces moved that could not have moved otherwise. Also the capture of a piece means all of the tempo it gained is lost as well.

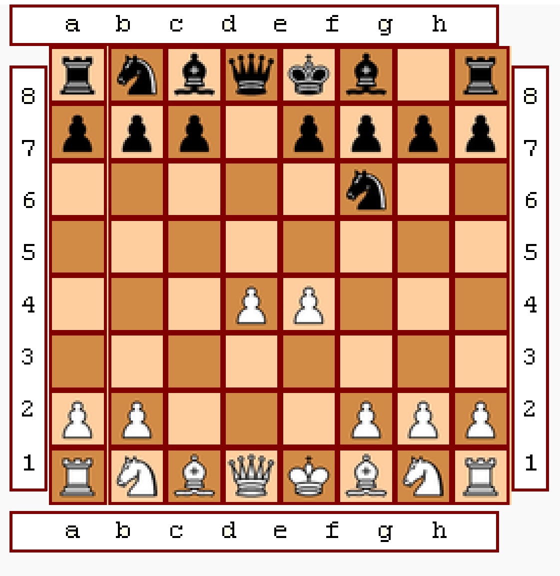
Essentially, tempo is one way of showing how many effective moves you have made. So the gain of a tempo is basically like getting a move for free. Three tempi is usually considered equivalent to a pawn in terms of advantage.

Example:



In the position above there have been 2 tempi played on each side, play continues with:

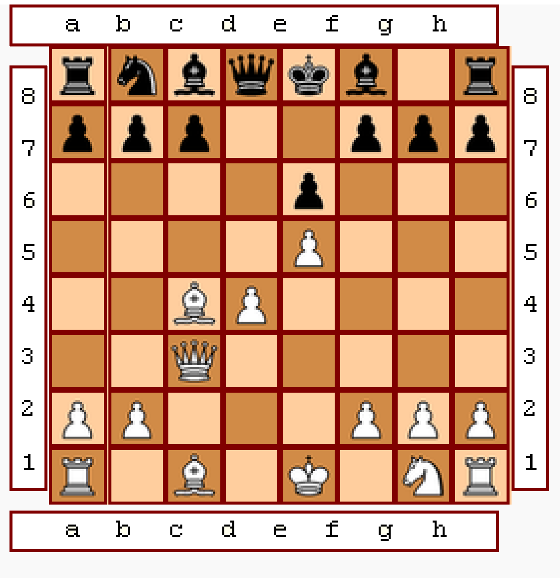
3. cxd5 Nxd5 4. e4 Nf6



Now white still has 2 Tempi (one for d4 and 1 for e4) while black only has 1. The captured pieces lost the tempo they had gained in moving and the knight lost the tempo it had when it captured.

For argument's sake, lets assume play went as follows:

5. e5 Nd5 6. Bc4 Nb6 7. Qd3 Na4 8. Nc3 Nxc3 9. Qxc3 e6



Now black still has only 1 tempo (e6) while white has 6 (2 queen moves, 3 pawn moves and a bishop move). This has let white develop 2 pieces, control the center and give black a cramped position. Also, while both sides can castle kingside in the same number of moves, White can connect his rooks (position them so there is nothing between them on the back rank) 2 moves sooner than black. Chances are, white will complete development and launch an attack before black is able to. This means white will have an advantage when the middlegame is reached.

Quality

Pawn Structure

Pawn structure is often the backbone upon which the strategy in a game rests. There are several things that need to be looked at when evaluating the pawn structure of a game. These include whether the game is open or closed, open files, open diagonals, vulnerable potential outposts, pawn islands, pawn chains, doubled pawns, backward pawns, passed pawns, protected passed pawns, overall majorities, and local majorities.

A game is considered **open** if the center pawns (the ones on the d and e files) have been captured. A **closed** game is where they have not been captured. In general, an open game means pieces are able to move more easily through the center of the board, which leads to a more active and generally tactical game. A closed game means that positional considerations are more important. The players generally have more time to build a plan and the game, while often lasting longer in general, often hinges on subtleties that are less likely to be noticed by novice players.

Usually beginners are encouraged to strive for open games to improve their tactical ability and only play closed games after they develop more of a feel for the game.

An **open file** is one with no pawns on it. This is basically a path for rooks to move on. This is usually their most powerful position. Often play can focus on who gains control of a file because this gives the person controlling it an advantage. A half open file is one where only the opponent's pawn is on the file. This is often a good second choice for a rook because it attacks the pawn in question and often opens up the rest of the way.

An **open diagonal** is again a diagonal with no pawns blocking it. This is one that a bishop can traverse. Usually an open diagonal that travels through the center of the board is preferable because it allows the bishop to move to the greatest degree (see also good vs. bad bishop).

A vulnerable potential **outpost** is a square in the opponent's territory that can not be defended by an opponent's pawn. This is usually the result of a pawn that has been advanced too far or a weakened pawn structure. Placing a knight on an outpost gives the knight attacking potential and makes it a relatively stronger piece. Other pieces may also be placed on outposts as well.

A **pawn island** is any pawn or group of connected pawns separated from any other pawns by an open or half open file. Having two or three pawn islands is usually necessary to activate your rooks, but more than that indicates a weak pawn structure. The endpoints of pawn islands are typically potential weaknesses and a large number of breaks in your pawn structure means there are more places your opponent can penetrate into your territory.

A **pawn chain** is a set of pawns linked so each one is protected by a pawn behind it. Pawn chains form on diagonals. Pawn chains often contribute to determining which side of the board a player will try to open play up on (pawn chains point toward the direction that typically are attacked because a bishop can be on the diagonal behind it. This allows the bishop to attack the opponents side of the board without worrying about their pawns getting in the way and with relative safety from opposing pieces that have to get around the pawn chain to attack the bishop. A pawn chain is most effectively attacked at its base (the pawn that has no other pawns protecting it).

Doubled pawns are pawns on the same file. This happens when a pawn captures. Doubled pawns often are seen as weaknesses because the lower pawn can not advance beyond the top one and doubling pawns usually leads to openings into your own territory for the opponent to attack. However, doubled pawns do have some advantages. For instance, a doubled pawn can advance without leaving undefended outposts or backward pawns. Tripled pawns are always weaknesses.

A **backward pawn** is one with no adjacent pawns behind it or on the same rank. It often needs to be defended with a piece and can not prevent an opposing piece from parking in front of it and using that square as an outpost while preventing the pawn from being able to advance.

A **passed pawn** is a pawn that has no opposing pawn in front of it and is past any adjacent opposing pawns. This pawn has the potential to advance to the 8th rank and queen. It can only be stopped by an opposing piece or the king. A protected passed pawn is a passed pawn guarded by another pawn. capturing the pawn still leaves you with a passed pawn on recapture. If the only opposing piece is the king, neither pawn can safely be captured because that would put the king behind the passed pawn. The passed pawn can then advance and the king will never be able to

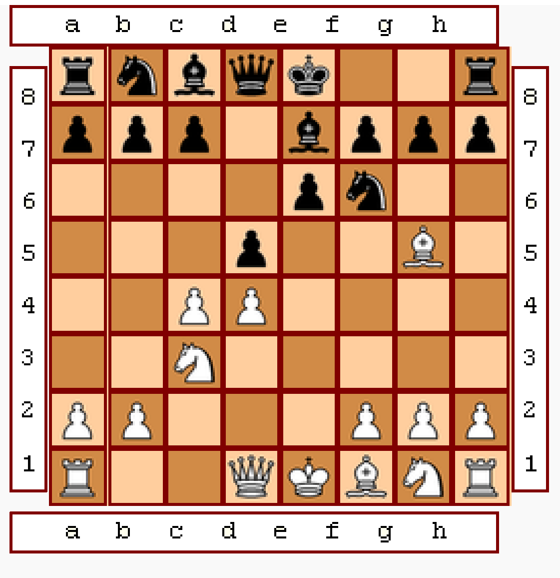
"catch up" to capture the pawn. The pawn will then safely promote. If you have a passed pawn, you may want to trade off pieces to protect it.

A **pawn majority** is where one person has more pawns than the other. It is an advantage because it is likely to lead to a passed pawn. A player who is ahead a pawn or two may try to trade off pieces and then get a passed pawn. A player with fewer pawns will try to hold onto his pieces in case he needs to sacrifice one to prevent a pawn promotion.

A **local pawn majority** is a majority in one section of the board. If a player has a local pawn majority, he may focus play on that side to get a passed pawn. If players have opposing pawn majorities (e.g. one has a queenside pawn majority while the other has a kingside majority), each side will try to restrict the other's play on their majority side while attempting to focus play on their side in an attempt to get a passed pawn.

Active and passive pieces

An active piece is one that has the potential to make a threat. A passive one is usually relegated to defending a piece (or worse - a pawn).



In this example, white's bishop on g5 is considered active, while black's bishop on e7 is considered passive.

Piece activity depends on whether it can move and attack. A piece can be rendered passive if it is stuck protecting another piece or if it is restricted from being able to get into play by its own pawns.

Good vs. Bad Bishops

As noted above, a bishop can only travel on squares of one colour. This leads to a situation

wherein one bishop may be effectively blocked out of the game by the pawn structure. In general it is better to have your pawns on the opposite coloured squares to your bishop. For example, if you as black have pawns on e6 and d5, your queen's bishop is likely to be a "bad bishop." It is bad because it is hard to do anything constructive with it; developing it to g4 is impossible and "fianchettoing" it via b7 is ineffective since your pawn on d5 blocks any influence it may have over the centre.

When one has a bad bishop there are two methods to improve the game: exchanging the offender and freeing up the game. In general it is profitable to try to exchange your bad bishop for an opponent's bishop or knight, as your bad bishop has little value. However, it is important to bear in mind that in the end game having two bishops is considerably stronger than have two knights or a bishop and a knight. Therefore you should always be wary of exchanging bishop for knight in situations where an endgame is likely. The other method to rid yourself of this weakness is by freeing up the game through making pawn moves.

Overloaded pieces

Overloaded pieces are pieces which defend too many other pieces and therefore cannot be considered to defend all of them at once. For example, a rook can defend up to 4 pieces, but if one is taken, and the rook takes the offending piece, 2 of the other pieces are undefended.

Initiative

The player with the initiative is the player who is making the threats to which the other person must respond. Having the initiative is advantageous because it forces your opponent to place his pieces in essentially defensive formations. A piece that is defending a square generally has less mobility (freedom of movement) than a piece attacking the same square.

Having the first move, it is generally white who has the initiative in the early part of the game. Therefore trying to maintain the initiative would be prudent strategy.

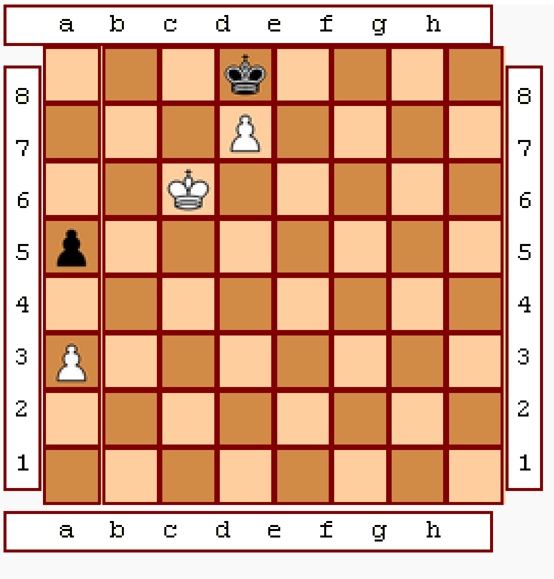
Compensation

Compensation is a term used in chess to describe the situation in which one player is materially down but has advantages in position on the board that make up for this material deficiency.

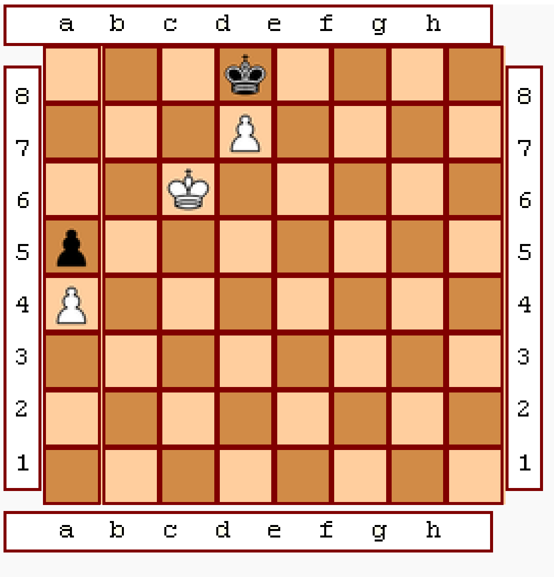
Typically having compensation for a piece means that an attack against the enemy's king or strong points cannot be repelled or may only be repelled by the enemy returning the material he is up. Often compensation can refer to having the initiative or in trapping the opponents king in a vulnerable position. A pawn majority on one wing or a passed pawn can also sometimes be considered compensation for a minor piece. Generally the player who is down on material has to act quickly and avoid exchanging pieces to prevent the enemy from making his material advantage count.

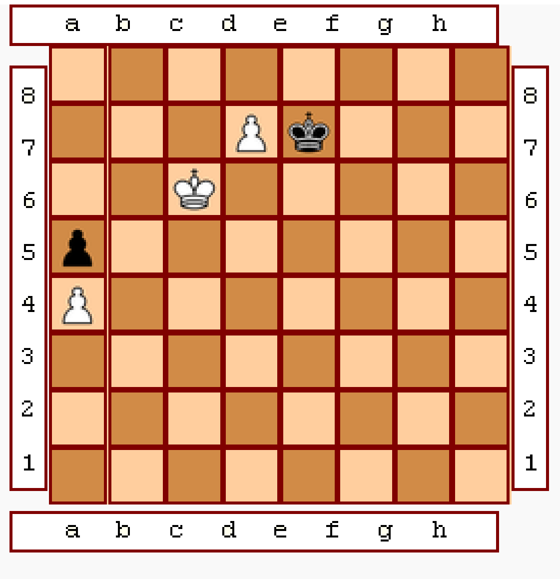
Zugzwang

A Zugzwang situation that occurs when any move a player makes will weaken his/her position, however, he/she is compelled to move in accordance to the rules. An example of the zugzwang is as follows:

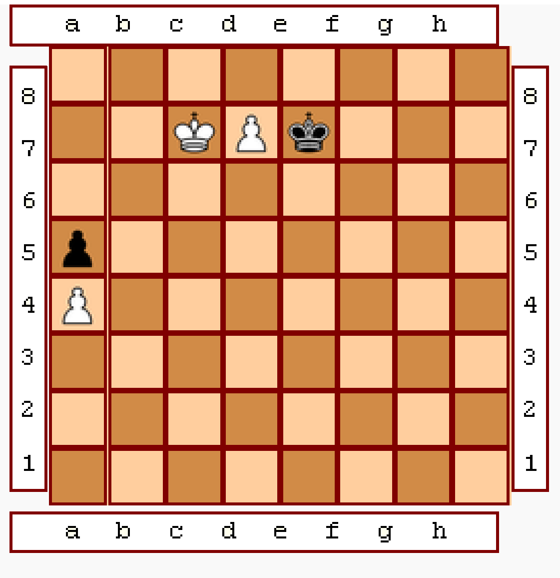


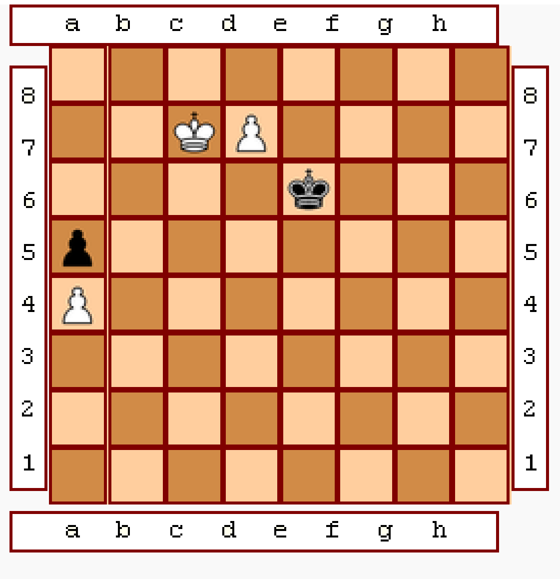
White moves the pawn, making a zugzwang and forcing Black's king to move.

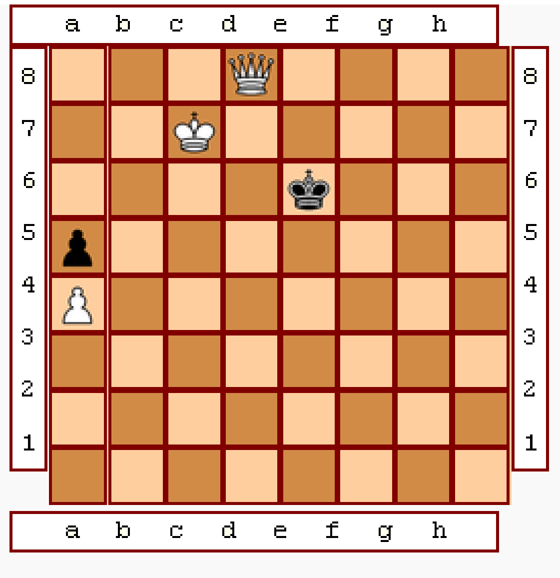




The black king is forced to move away from his current position because he now has no other move.







White gains a queen and wins the game easily.

Combining attack with defense

A winning strategy in Chess often involves balancing several considerations against each other. Moves that maximize immediate material gain might expose a vulnerability or yield a difficult position as the game progresses. Similarly, material sacrifices for position may be disadvantageous if they cannot be parlayed into an effective attack. Thus, a key consideration should be balancing attack with defense. A profitable move would be one that both furthers your attack and solidifies your defense.

5 Basic Openings

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See also: Opening theory in chess

The following is an overview of the aims of an opening and some standard openings that you can try in your games. All of them are playable and should lead to reasonable games with best play.

Aims of an opening

Before looking at some of the more common openings played today it is important to consider what you are trying to achieve in the opening of a chess game.

In some cases, one player will sacrifice a pawn, or in some cases even more, to accomplish the goals listed below. Such an opening is called a **gambit**.

Development

You should attempt to move your pieces away from their starting positions to squares in which they can participate more fully in the game. Obviously a Knight at c3 is more effective both defensively and aggressively than a knight on b1. Avoid moving pieces more than once in the opening as this allows your opponent time to develop another piece while you are wasting time. Also avoid moving your queen in the opening, it can too easily be chased around the board by other pieces which aids your opponents development while wasting moves for you.

Control the Centre

The squares in the centre of the board are critical for 2 simple reasons. Firstly Pieces in the centre are able to move to more squares than pieces on the edges. (Note a knight on a3 can move to only 4 squares, whereas a knight on c3 can move to 8.) Secondly if you control the centre it is easier to move pieces from Kingside to Queenside quickly.

One of the great truths in chess is that attacks along one wing are destined to fail if the centre is not sufficiently controlled. This is because the defender with a strong centre will generally be able to muster enough defence on that side and at the same time mount a counterattack in the centre and/or on the other wing. So if you plan on mounting an attack make sure you control the centre

Traditionally it was thought that the ideal situation is one where you have a pawn majority in the centre, especially with pawns on e4 and d4 (for white). However it has been shown that an equally valid strategy is to control the centre with pieces and make minimal pawn moves. The thinking is that central pawn moves often lead to permanent positions and can block attacks. "Fianchettoing" a bishop by moving it to b2 or g2 after b3 or g3 allows the bishop to keep a watchful eye on the centre without fixing a pawn in the centre.

Castle

A King in the centre of the board is open to attack. It is generally a good idea to castle your king so as to be able to defend it easier. Some players will sacrifice material in order to prevent the enemy king from castling and to attack it ferociously due to its vulnerability. Castling also has the added benefit of bringing the rooks together on the first rank so that they are able to combine in defence and attack. Once your pieces are developed, king is safely castled, and your rooks are combined, the opening is over.

Protect the King

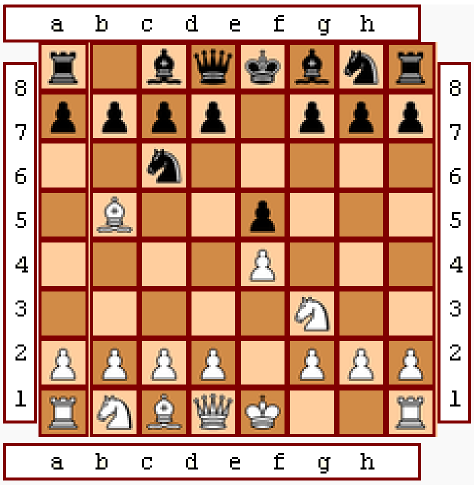
It is not always necessary although highly advisable to protect the king through castling. That being said, there are other ways to go about protecting the king than castling although they are less efficient and will often result in pins.

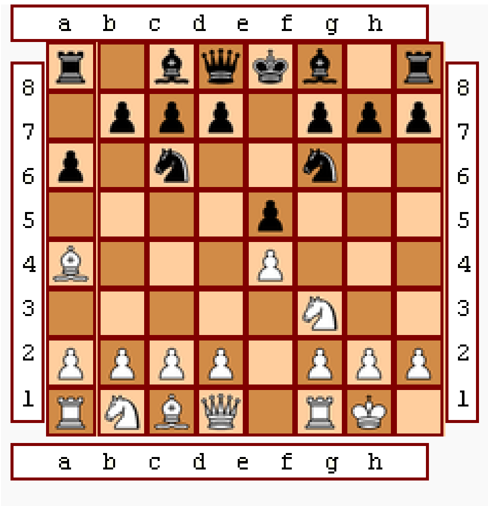
King's Pawn Openings

Spanish Opening (aka Ruy Lopez)

1.e4 e5 2.Nf3 Nc6 3.Bb5 the main line continues **3...a6 4.Ba4 Nf6 5.0-0**

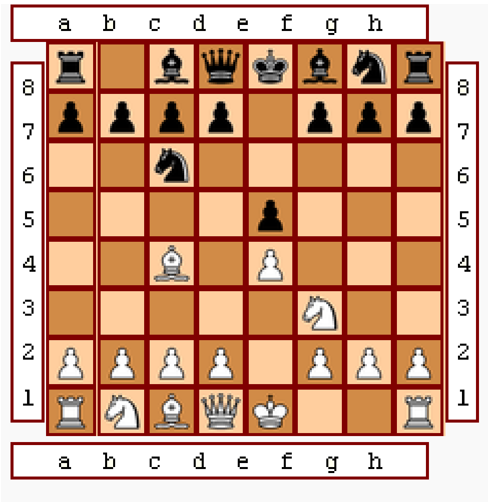
The move **3...a6** works because if white plays **4.Bxc6 dxc6**, **5.Nxe5** will fall to **5...Qd4**, forking the pawn and the knight.





Italian Game

1.e4 e5 2.Nf3 Nc6 3.Bc4

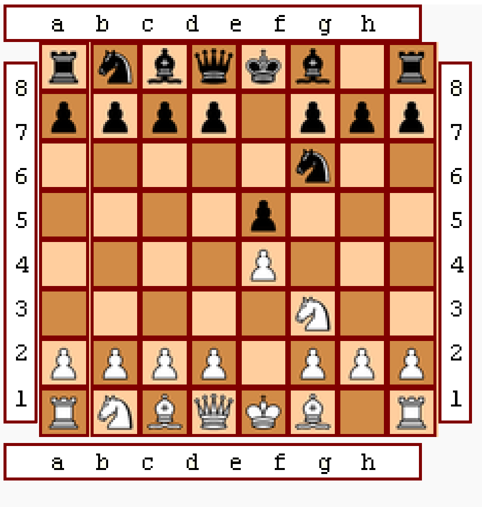


There are two key replies: 3...Bc5, known as the Giuoco Piano (Italian for Quiet Game), and 3...Nf6 headed to a much more involved opening called the Two Knights Defence.

School children in local clubs often drift into weaker variants of the Giuoco Piano, mostly out of insufficient knowledge. A few scholastic trainers have even suggested avoiding the opening, as there are fewer crisp strategic concepts compared to many other openings.

Russian Game (aka Petroff's Defence)

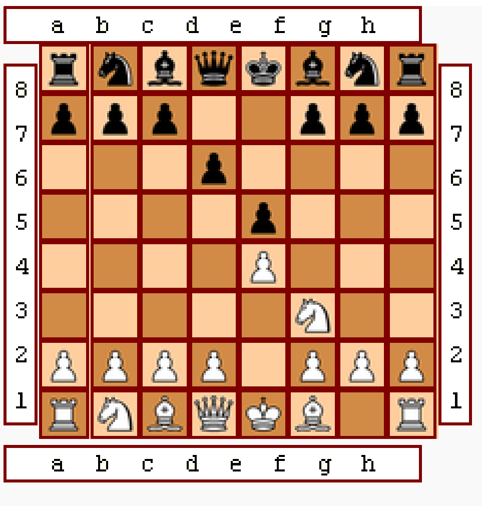
1.e4 e5 2.Nf3 Nf6



The Petroff Defense may look like a counter-attack, and very early on this was supposed to be the idea. However, it soon became apparent that the symmetrical nature of the opening produced defensive positions. It is considered quite solid, and is a key defensive opening against the dangerous first move 1. e4. There are a few gambits which White can try to shift the style of the opening. The Cochrane gambit is perhaps the most dangerous. It involves a Knight sacrifice on f7. Currently not considered objectively sound, its use is psychological: White dares the opponent to spend twenty moves defending against an attack, and this pressure may cause the Black player to finally fall victim to a tactical shot.

Philidor Defence

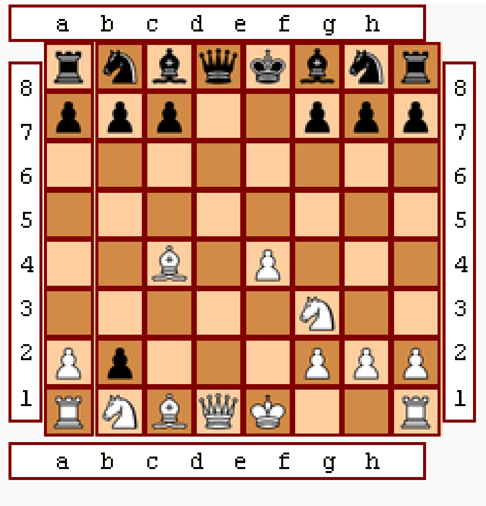
1.e4 e5 2.Nf3 d6



If Black wants to defend the threatened pawn with a pawn, this is the way to do it (playing 2...f6? is plain bad). It gives Black a solid but somewhat cramped position. The f8 bishop is hemmed in and will be relegated to a defensive role. The Black knight retains the option of going to d7 leaving the c-pawn mobile, but it is not without reason that 2...Nc6 is much more common than 2...d6.

Danish Gambit

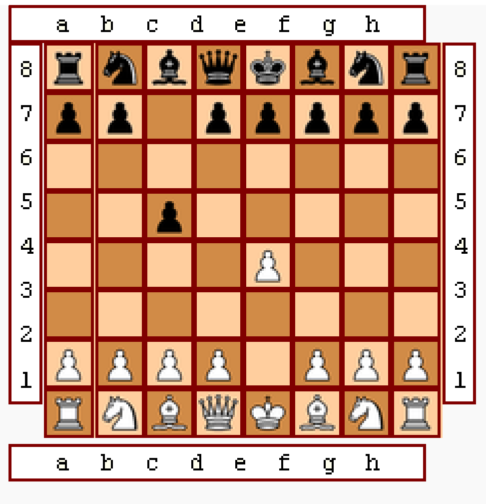
1.e4 e5 2.d4 exd4 3.c3 dxc3 4.Bc4 cxb2 5.Bxb2

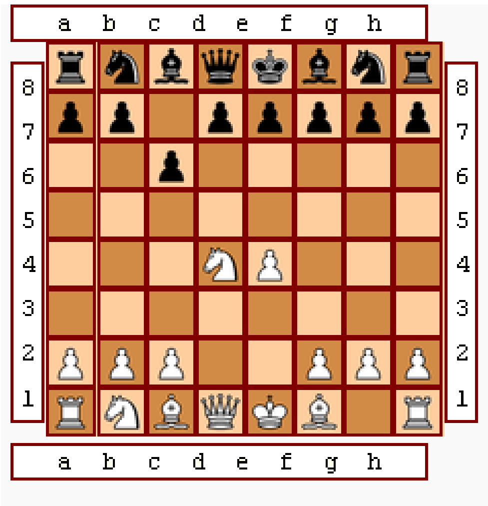


This gambit gives White quick development and control of the center at the cost of two pawns initially. However, current opinion reports that to properly beat off the attacking waves, at least one and sometimes both pawns must be returned. This involves the liberating pawn push ...d5 by Black. Even so, inventive attacking players can still use the resulting open lines to play a complex game.

Sicilian Defence

1.e4 c5





Play can continue.

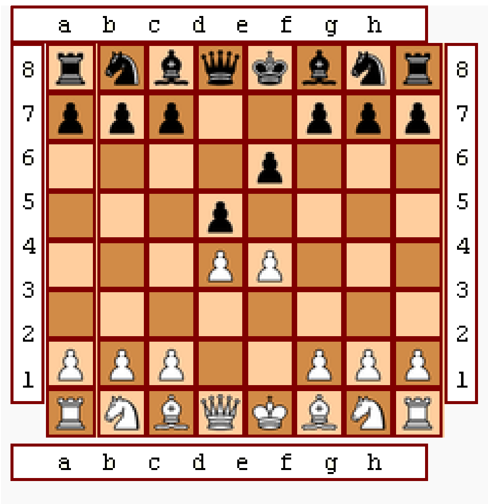
2.Nf3 Nc6 3.d4 cxd4 4.Nxd4 (2...d6 and 2...e6 are also common, and usually also met by 3.d4)

The Sicilian is the most common and best-scoring response to 1.e4, as it balances the white advantage with flank play. It discourages White from occupying the centre with 2.d4. After 2...cxd4 White must either take the pawn back with the queen (and move it again after 3.Qxd4 Nc6) or sacrifice the pawn, usually with 3.c3.

One problem with the Sicilian is that there is a vast amount of theory written on it, and in a sharp opening like this, you can wind up in trouble if you don't know it.

French Defence

1.e4 e6 2.d4 d5



White has three essential continuations: 3.Nc3 "Winawer Variation" 3.Nd2 "Tarrasch Variation" 3.e5 "Advance Variation".

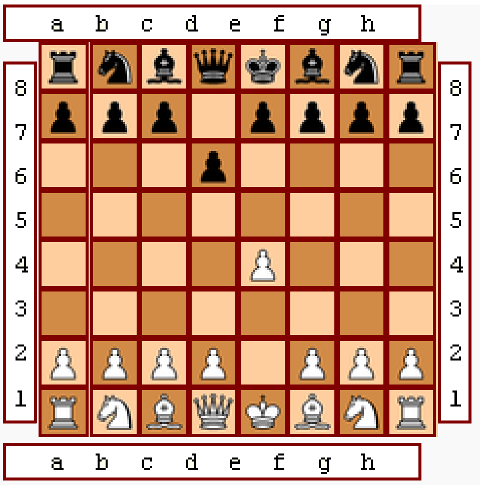
A fourth alternative, the "Exchange Variation" is 3. exd5, but this actually frees Black's game

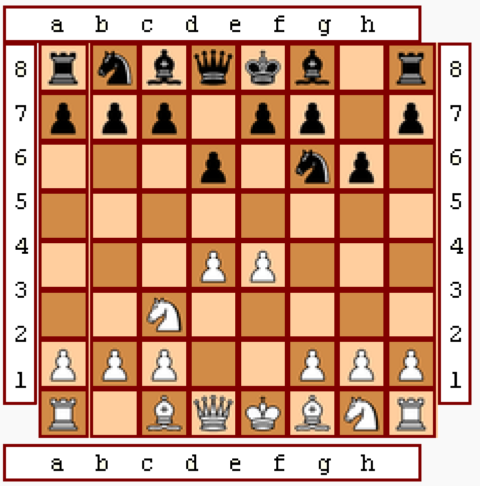
from all of the traditional cramping problems of the French Defence. It is mainly used by White players who forgo all attempts at a theoretical battle, hoping to play on "general principles".

The French Defence is considered one of the strongest black responses to the White opening move 1.e4. Among world class grandmasters, it currently trails the Sicilian 1. e4 c5 and the symmetrical 1.e4 e5 in popularity.

Pirc Defence

1.e4 d6, usually followed by **2.d4 Nf6 3.Nc3 g6**

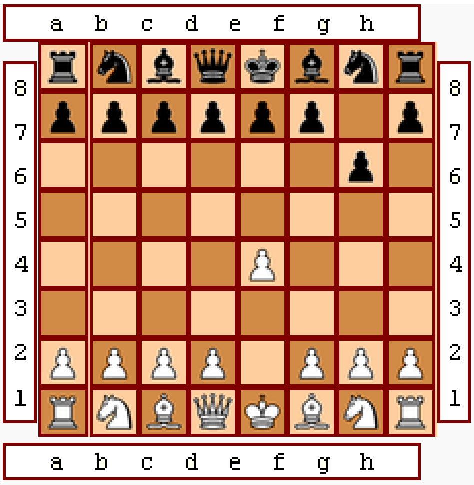


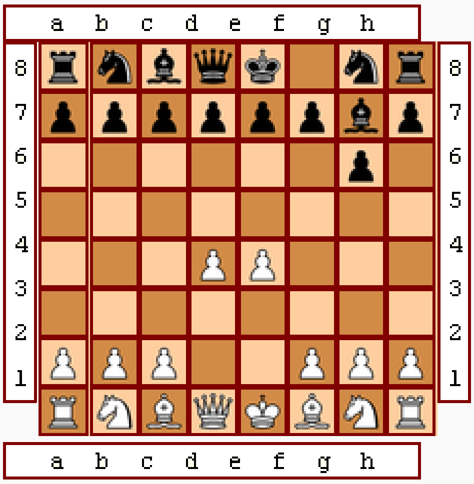


This opening bears considerable similarities to another one called the King's Indian, which begins 1. d4 Nf6 2. c4 g6 3. Nc3 Bg7. However, subtle but long range strategic differences exist between the two. In the Pirc, White's c-file pawn is still at home, and not committed to the c4 square. This means that overall, White has better control of the d4 square. The pawn move c2-c4 has been replaced by a developing piece move N-c3, and this "faster" development tends to encourage White towards central or kingside attacks compared with the queenside play classically associated with the King's Indian defense.

Modern Defence

1.e4 g6, usually followed by **2.d4 Bg7**

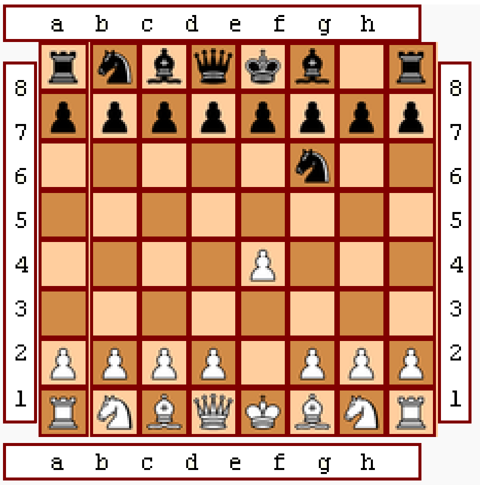


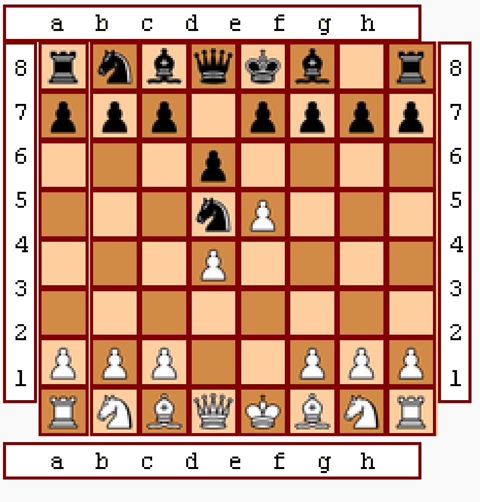


This move order is often used to "back into" a Pirc defense, while avoiding specific move order issues. However, an entirely different range of strategy is possible based upon ...c6 and ...d5.

Alekhine's Defence

1.e4 Nf6, usually followed by **2.e5 Nd5 3.d4 d6**

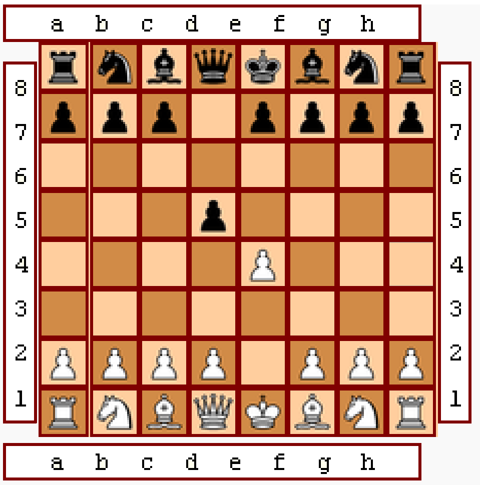


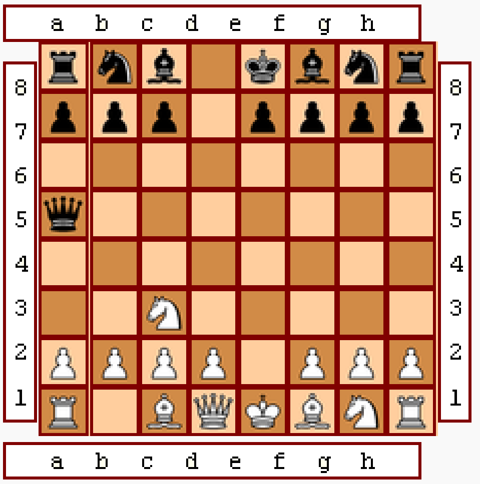


This looks like a rather alarming opening for Black to play. Black lets White chase the knight around the board and use that time to build up the pawn centre. Black's plan is to show that White has expanded too quickly, and will find the pawn centre vulnerable. The disadvantage to this opening is that if White succeeds in maintaining it, White will have a serious and suffocating advantage in space.

Scandinavian Defence

1.e4 d5, usually followed by **2.exd5 Qxd5 3.Nc3 Qa5**





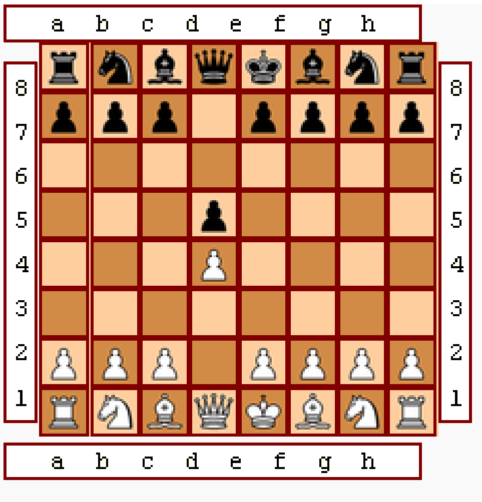
Playing d7-d5 is the main idea behind most of the semi-open games for black. Here it is played immediately for the price of an extra move with the queen after 3.Nc3.

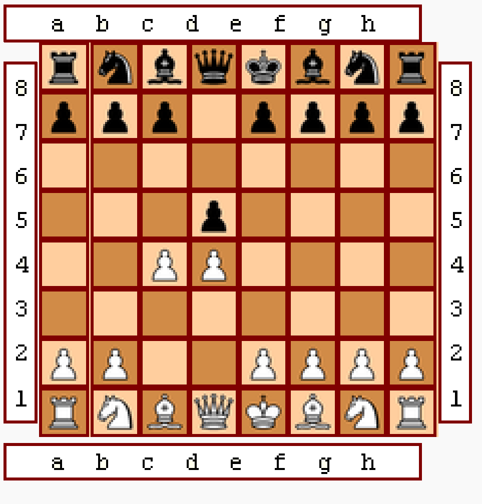
Long disparaged as the epitome of weak play "because moving the queen early wastes time", it was resurrected in the 1990s with a pawn move c7-c6, allowing the queen to retreat from a5 to c7 when necessary. Now it is considered an attempt to reduce White's central pressure, and is popular among club players because White suddenly has to demonstrate some sophistication.

Queen's Pawn Openings

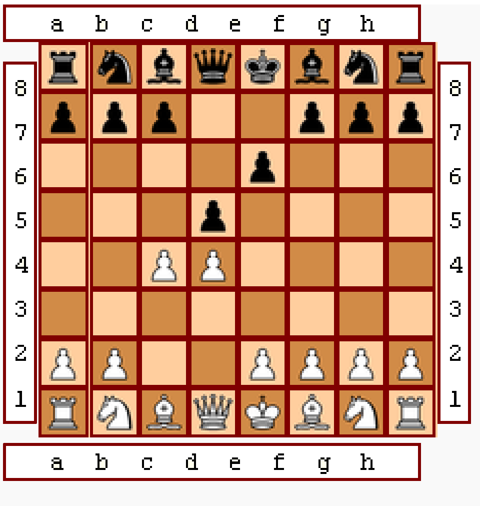
Queen's Gambit

1.d4 d5 2. c4

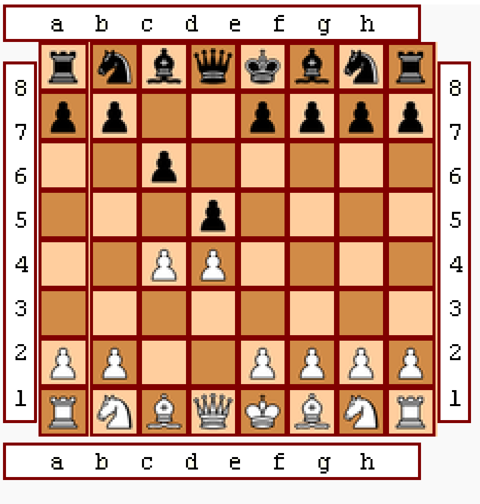




2...e6 3.Nc3 Nf6 4.Bg5 Be7 leads to "Queen's Gambit Declined" variations.

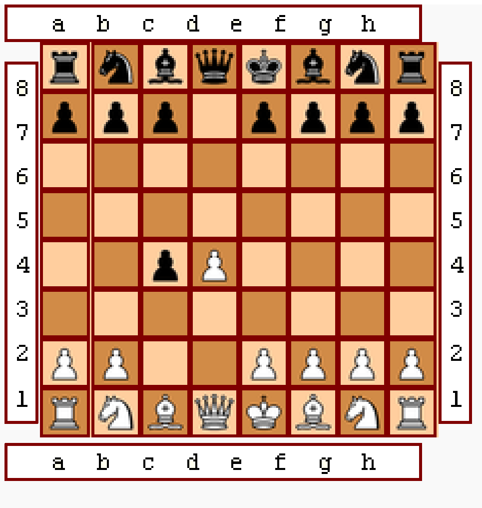


2...c6 (usually followed by 3.Nf3 Nf6 4.Nc3 dxc4) leads to the "Slav Defence".



This is one of the opening "families" with interchangeable moves. It is quite possible to play both ...e6 and ...c6 (known as the Semi-Slav), and there are large numbers of interchangeable points called transpositions.

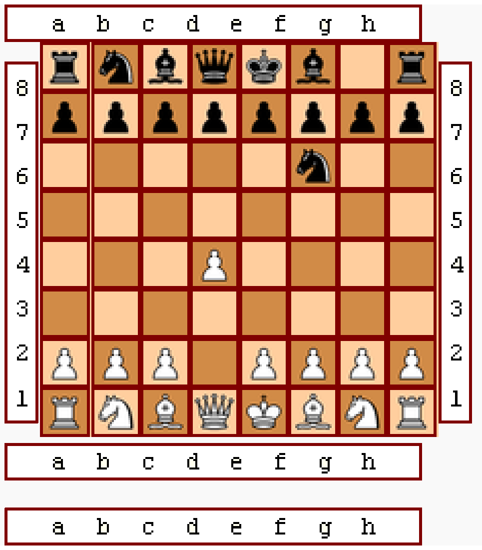
2...dxc4 is the "Queen's Gambit Accepted".

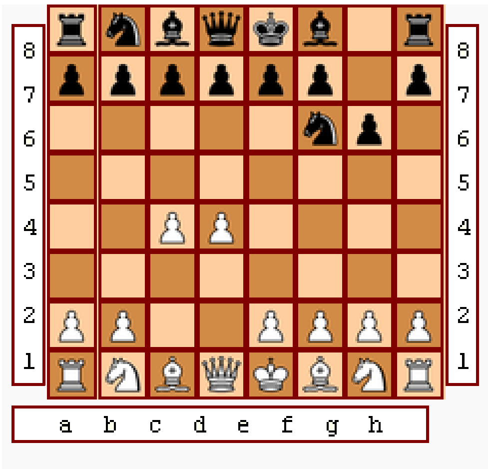


Black has gained a pawn but Blace cannot keep it. If White wants it back White can play e2-e3 at some point, threatening the pawn with the bishop and if Black tries to defend it with ...b5 Black will find the queenside severely weakened (and the pawn should fall anyway). Nonetheless, this is playable for Black as well, instead of trying to keep the pawn, it is best to develop quickly and strike back at the White centre.

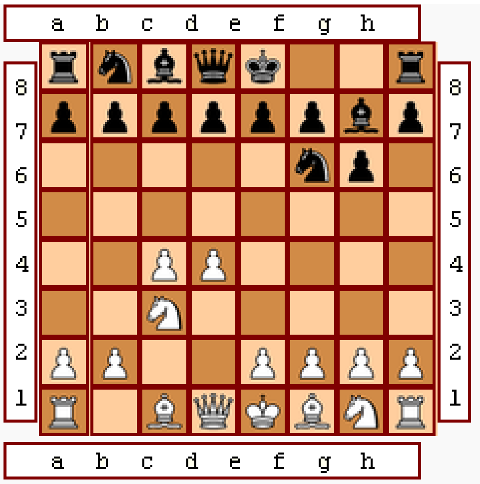
King's Indian Defence

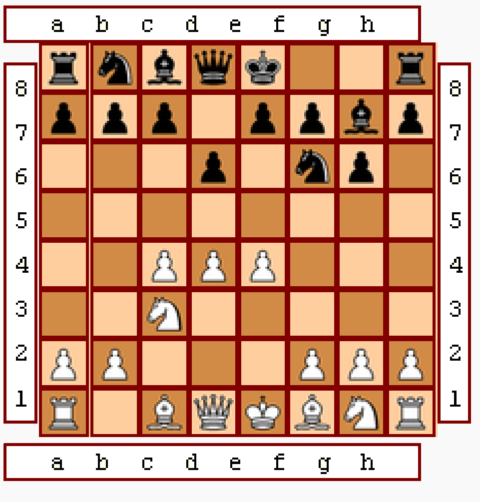
1.d4 Nf6 2. c4 g6





3.Nc3 Bg7 4. e4 d6



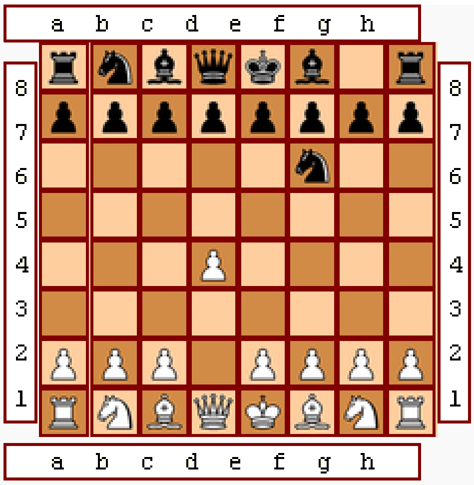


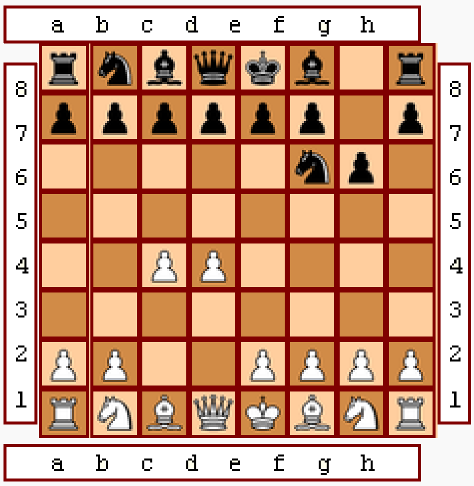
Popularised after World War II, the King's Indian Defence involves opposite sides strategies in a race between Black's mating attack vs. White's methodical attempts to unravel Black's Queenside.

At World Class level, there is some concern that Black's concept is very committal, leading Former Champion Garry Kasparov to discontinue his use of the opening shortly before he retired from the game. At any level below that, it is still very popular due to the deep developmental work by Fischer and Kasparov.

Grünfeld Defence

1.d4 Nf6 2.c4 g6





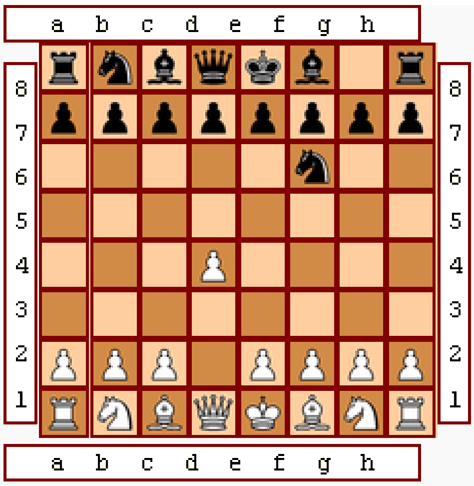
3.Nc3 d5

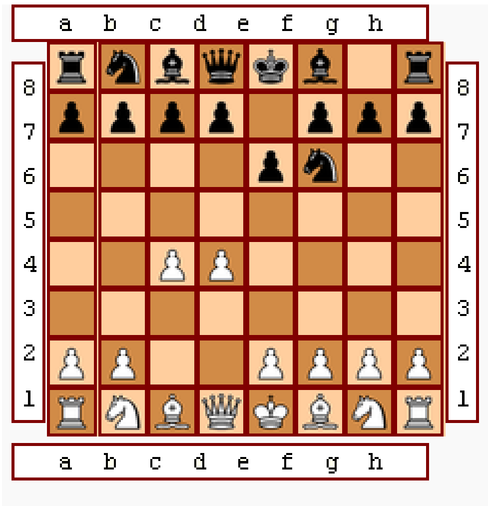


Looks a bit like a cross between the Queen's Gambit and the King's Indian Defense, but this opening is played differently from both of them. Black gives White an early opportunity to grab control of the centre with 4.cxd5 Nxd5 5.e4. Black will need to launch a counterattack against that centre, perhaps with ...c5 to stop White from getting the upper hand. If Black succeeds, the White centre may indeed be very vulnerable, if Blacks fails, the centre will be very dominating.

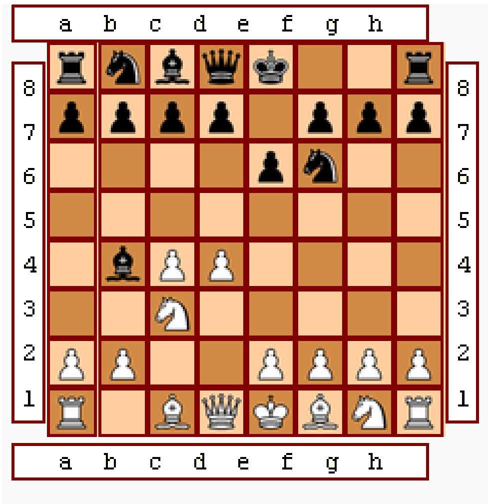
Nimzo-Indian Defence

1.d4 Nf6 2.c4 e6





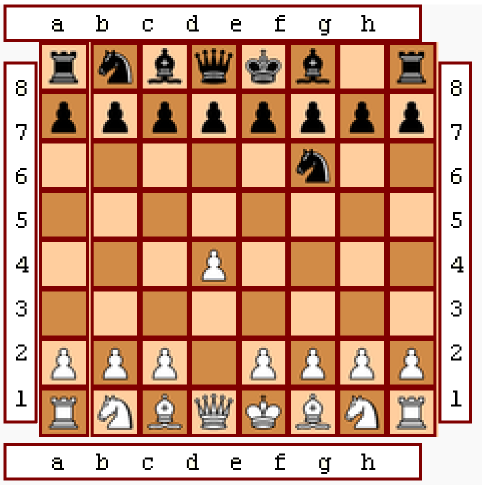
3.Nc3 Bb4

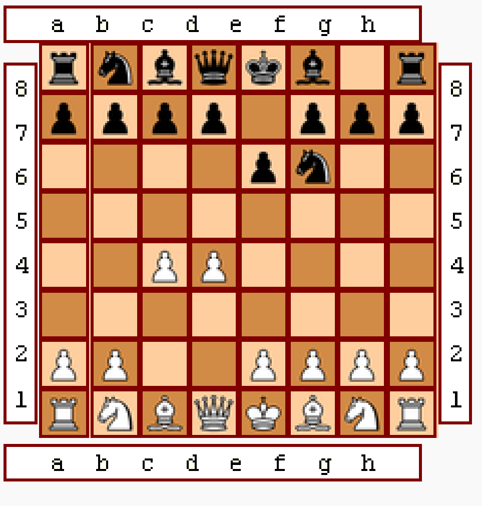


After 3.Nc3, White threatens to take control over the centre by playing 4.e4. The Nimzo-Indian, named after the hypermodern player Aron Nimzowitch, is one of the two main ways of preventing this (the other way is the direct 3...d5 which leads to the Queen's Gambit Declined). Black puts a bishop where it pins the White knight, and often intends to trade it off, surrendering the bishop pair but inflicting White with doubled pawns if needed to recapture with the b-pawn. White can avoid these doubled pawns by playing the queen to c2, but this costs time. On the other hand, Black has not staked out a big claim of the centre yet, and White can get a real space advantage if Black is careless.

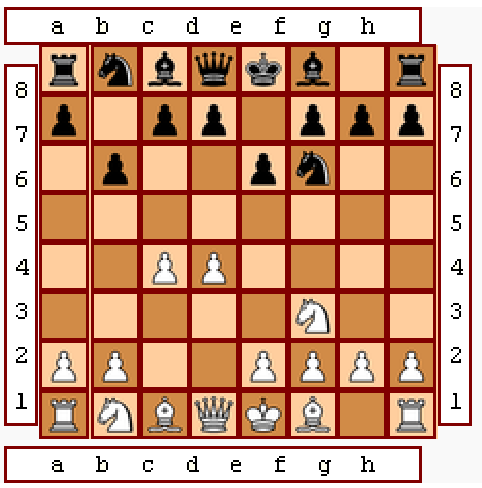
Queen's Indian Defence

1.d4 Nf6 2.c4 e6





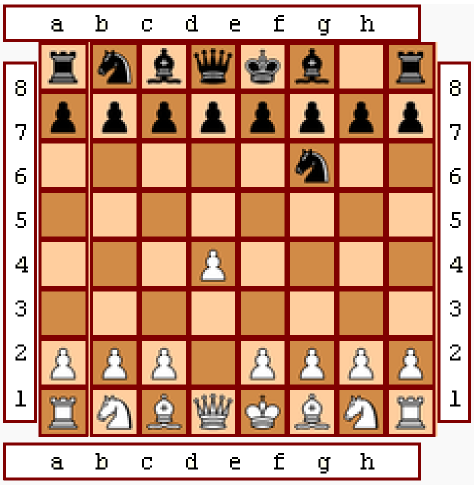
3.Nf3 b6

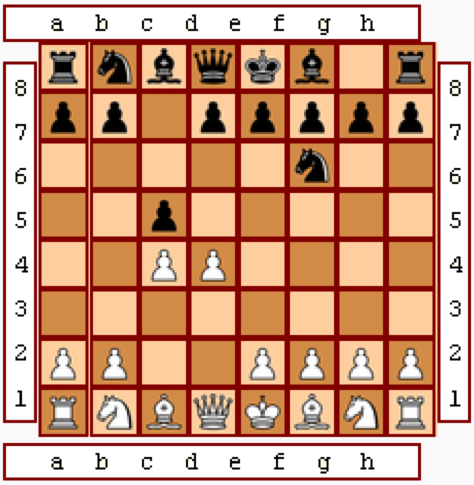


Strategically, this opening is similar to the Nimzo-Indian. White has played 3.Nf3 rather than 3.Nc3 so he is not threatening to grab the center with 4.e4 just yet. Playing the Nimzo-like 3...Bb4+ anyway is possible (and called the Bogo-Indian) and tends to lead to rather quiet play. More usual is 3...b6 which opens up for the bishop to go to b7 where it will continue the clamp-down on the e4-square, or to a6 where it will put pressure on White's pawn on c4.

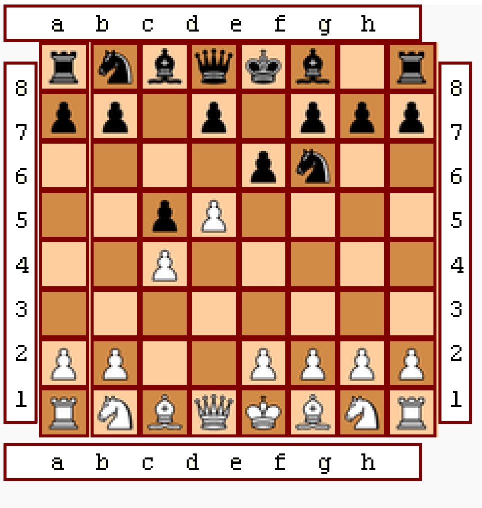
Modern Benoni

1.d4 Nf6 2.c4 c5



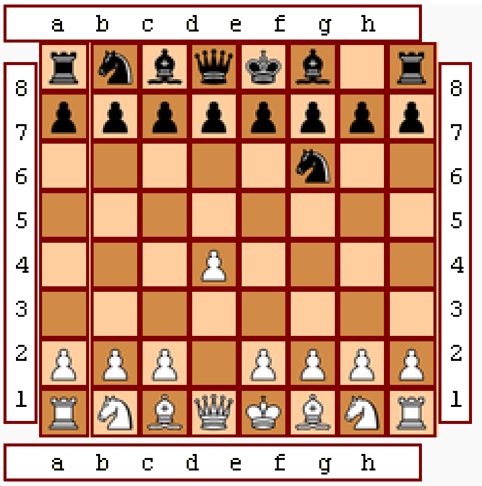


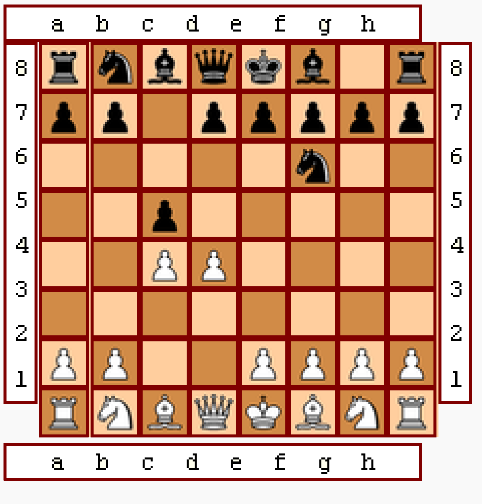
3.d5 e6



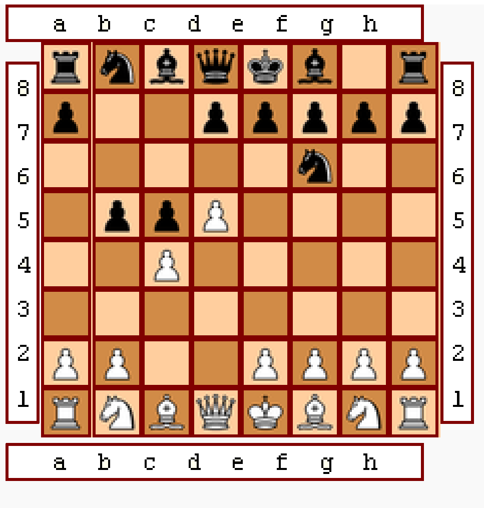
Benko Gambit

1.d4 Nf6 2.c4 c5





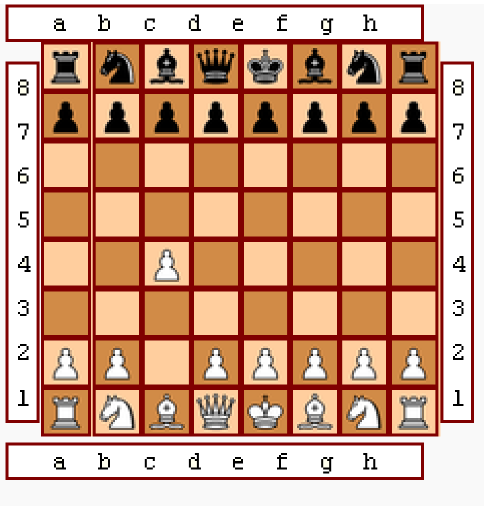
3.d5 b5



Other openings

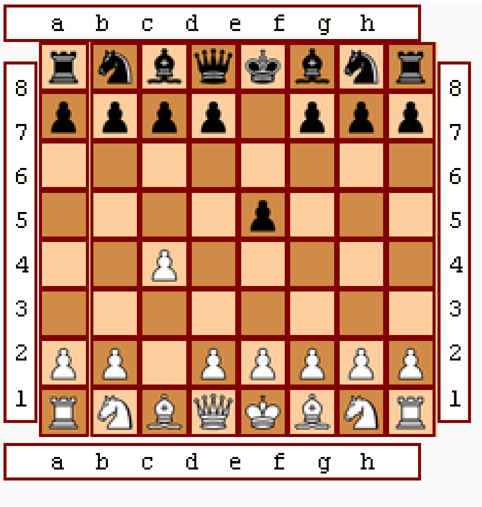
English Opening

1.c4

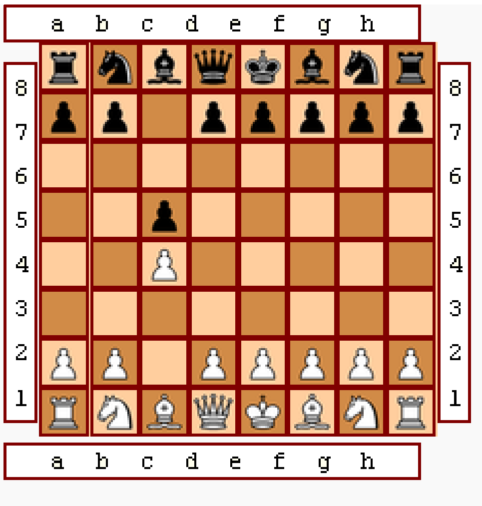


Black's most common responses are:

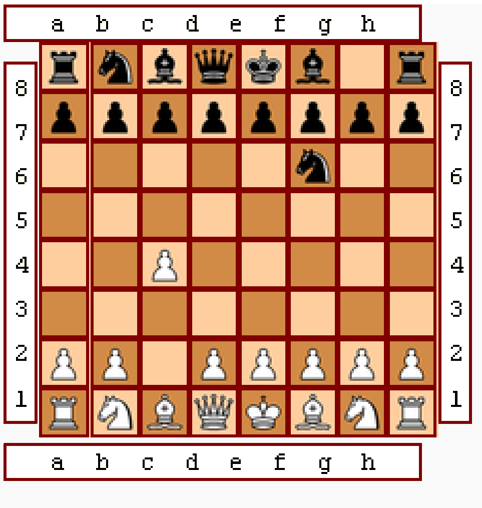
1...e5, a reversed Sicilian Defence



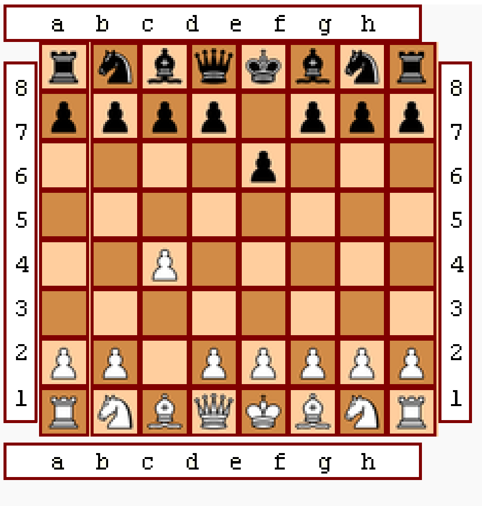
1...c5



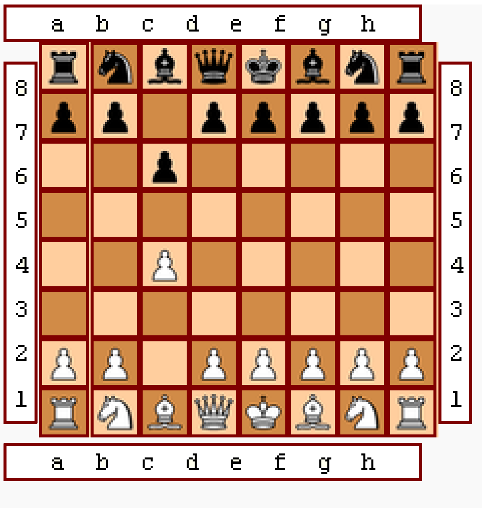
1...Nf6



1...e6 (preparing 2...d5)

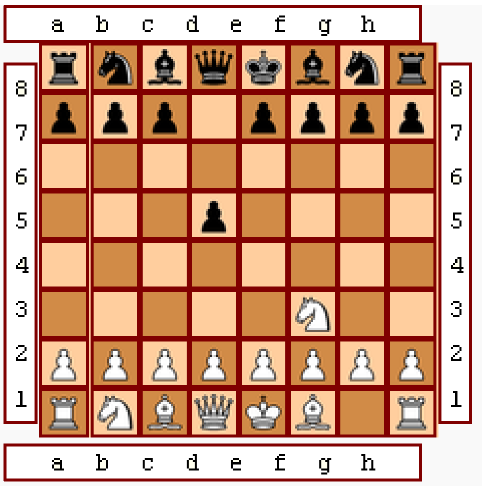


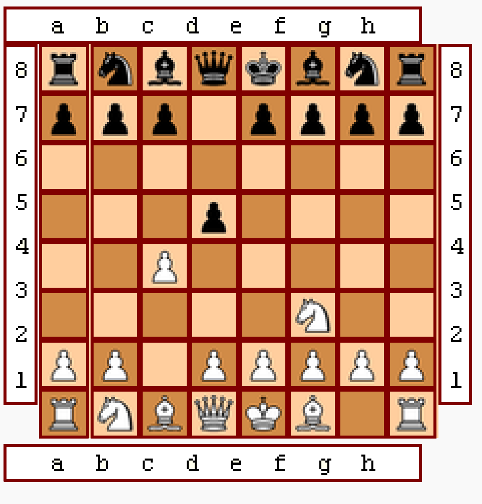
and **1...c6** (preparing 2...d5)



Réti Opening

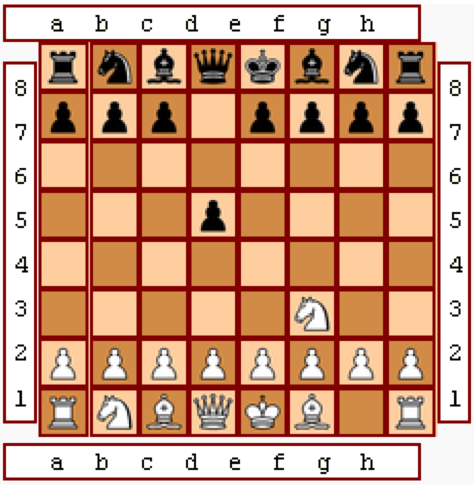
1.Nf3 d5 2.c4

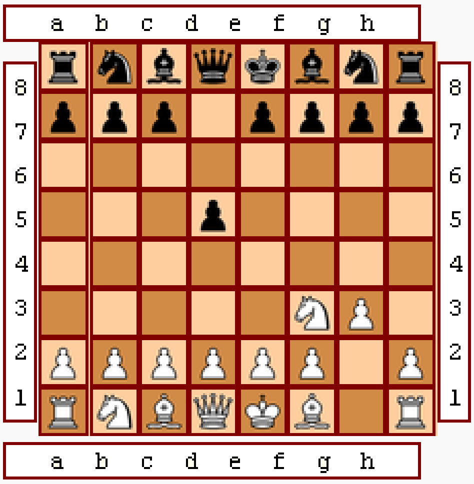




King's Indian Attack

1.Nf3 d5 2.g3





6 The Endgame

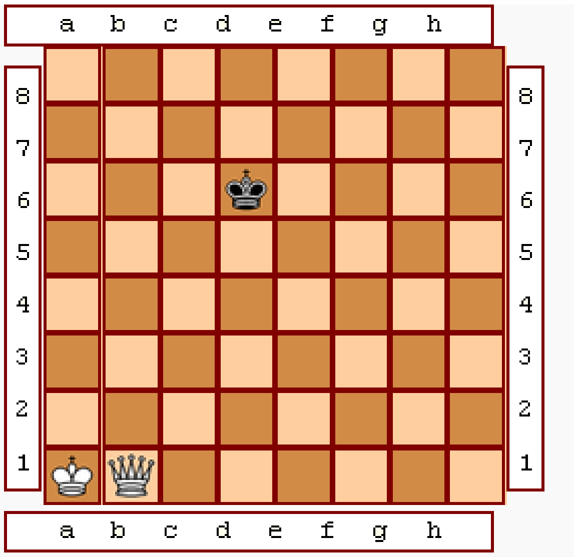
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Basic Checkmates

These include positions that have no pawns. When one side is ahead in material and has pawns, the easiest winning plan is typically to queen one or more pawns and use them to checkmate.

The situations where one has a king and queen, or king and rook, versus a lone king occur very often and it is essential to know how checkmate is achieved in such cases. The other cases, with minor pieces (bishops and knights) are much more rare, but are covered here for completeness.

King and Queen vs. King



Sample starting position for K+Q vs. K mate

Delivering checkmate with a king and queen against a lone king is quite easy. The basic technique involves driving the king to the edge of the board, which the queen can do by herself. It's faster if you use your king and queen together, but this increases the probability of a stalemate, so beginners should do it without the king. The technique described below will accomplish the mate in about 10 to 15 moves.

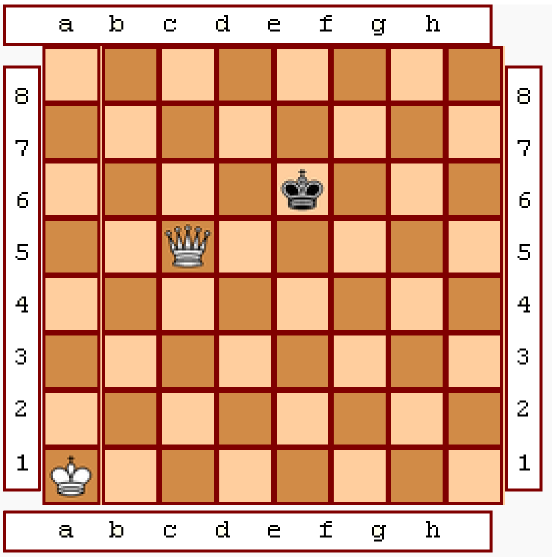
Here's an example (see diagram on right):

1.Qb5

Cutting the black king off along the fifth rank.

1...Ke6

1...Kc7 2.Qa6 limits Black's king to the last two ranks.



Position after 2.Qc5

2.Qc5 (see diagram)

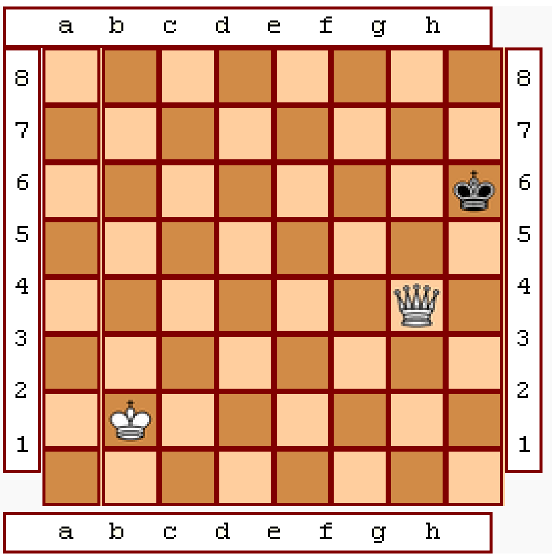
During this phase, notice how White's queen always stays a knight's move away from the black king, and how no checks are necessary (or even desirable). Moves like 2.Qc6+? only allow Black's king more freedom after 2...Ke5.

2...Kf6 3.Qd5 Kg6 4.Qe5 Kf7

After 4...Kh6 5.Qg3 White's goal has been achieved: the black king is trapped on the edge. White will then bring his king to f6 to force mate.

5.Qd6 Kg7 6.Qe6 Kh7

Black's king is forced to the edge of the board no matter what he does, e.g. 6...Kf8 7.Qd7.



Position after 8.Kb2

7.Qg4 Kh6 8.Kb2 (see diagram)

Now that Black's king is stuck, the white monarch comes in to finish off his adversary.

8...Kh7 9.Kc3

9.Qg5 doesn't spoil anything, but it isn't necessary. Unlike the king and rook vs. king mate, here Black's king doesn't have to be trapped in the corner.

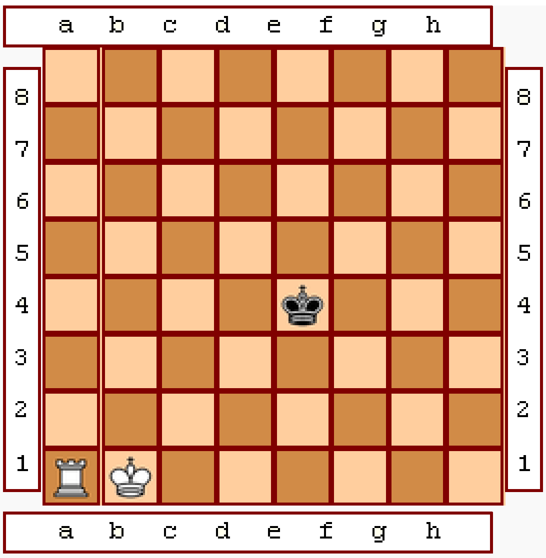
9...Kh8 10.Kd4

10 Qg6=?? stalemate was what Black was hoping for. Beware of this trap!

10...Kh7 11.Ke5 Kh8 12.Kf6 Kh7 13.Qg7#.

A detailed analysis of this endgame based on the computer-generated database is in Analysis of KQK Endgame. This shows that for any "King and Queen vs. King" endgame, white to move can force checkmate in at most ten moves.

King and Rook vs. King



Sample starting position for K+R vs. K mate

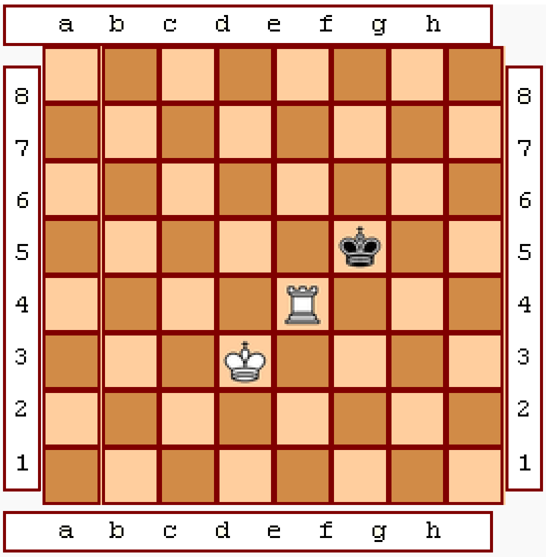
This mate takes longer to do than king and queen vs. king, because the king and rook have to work together to trap the opposing king on the edge (often in the corner). The most commonly taught technique involves confining the opposing king into a box using the rook, which is protected by its own king. Then, the box becomes smaller and smaller until the king is forced into the corner. From the diagram on the right:

1.Kc2 Ke5 2.Kd3 Kd5 3.Ra4 Ke5

After the king's position is improved, the box can be constructed:

4.Rd4

The box is d8-d4-h4.



Position after 5.Re4

4...Kf5 5.Re4 (see diagram)

Now it's e8-e4-h4.

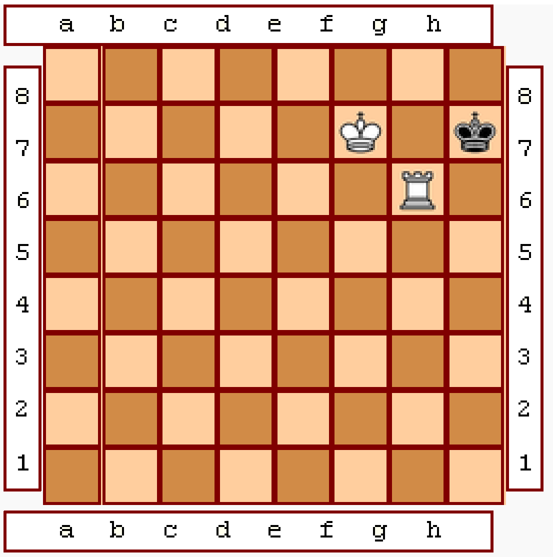
5...Kf6 6.Kd4

The box can't be reduced immediately, so the king creeps closer.

6...Kf5 7.Kd5 Kf6

7...Kg5 8.Ke6 Kg6 9.Rf4 Kg5 10.Ke5 Kg6 11.Rf5 Kg7 12.Rf6 Kg8 13.Kf5 Kg7 14.Kg5 Kh7 15.Rg6 Kh8 16.Kf6 Kh7 17.Kf7 Kh8 18.Rg6# is similar.

8.Re5



Position after 15.Kf7

Back to shrinking the box: the process repeats itself. Notice that just as in K+Q vs. K, no checks are necessary until the actual mate.

8...Kf7 9.Re6 Kg7 10.Ke5 Kf7 11.Kf5 Kg7 12.Rf6 Kh7 13.Rg6 Kh8 14.Kf6 Kh7 15.Kf7 (see diagram)

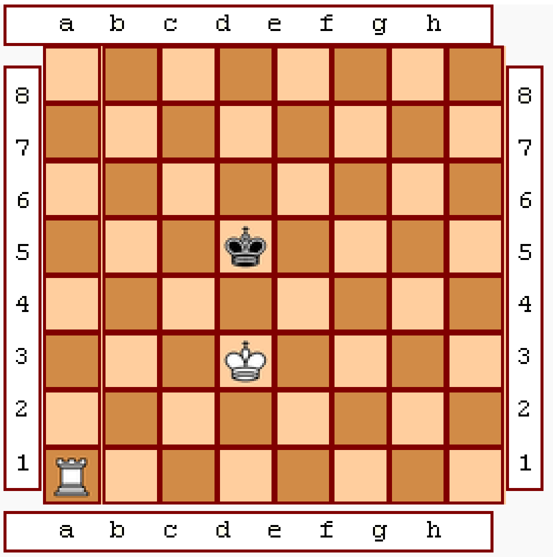
Something important to know: if it somehow transpires that White reaches this position but it's his turn to move, all he has to do is move the rook anywhere along the sixth rank (except Rh6+ of course!). Then, Black's king is forced to move to h8, and White gives checkmate with Rh6#.

15...Kh8 16.Rh6#.

The alternative method is based on the opposition of the kings (see below) with the rook being far away. From the same starting position as before:

1.Kc2 Ke5 2.Kd3 Kd5

Once again, White must improve the position of his king first. Now, once the kings are in opposition, he checks along the fifth rank to push the black king back.



Position after 2...Kd5

3.Ra5+ (see diagram)

Black has no choice but to give ground.

3...Kc6 4.Kd4 Kb6

4...Kd6 5.Ra6+ immediately cuts Black off the sixth rank.

5.Rg5 Kc6 6.Rh5 Kd6

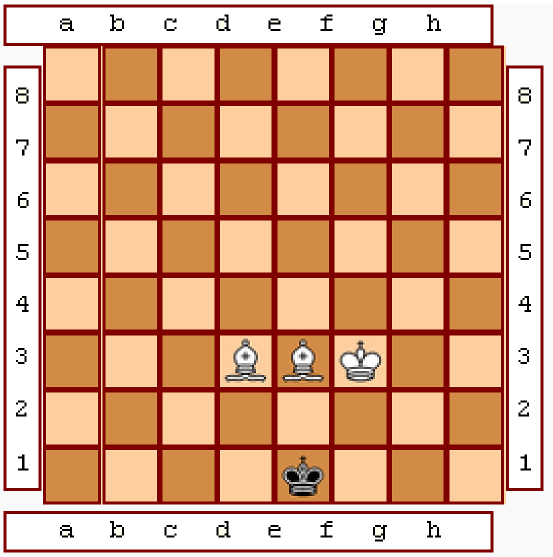
6...Kb6 7.Kc4 Kc6 8.Rh6+ is the same sort of thing.

7.Rh6+ Ke7 8.Kd5 Kf7 9.Ke5 Kg7 10.Rb6 Kf7 11.Ra6 Ke7 12.Ra7+ Kd8 13.Ke6 Kc8 14.Kd6 Kb8 15.Rg7 Kc8 16.Rh7 Kb8 17.Kc6 Ka8 18.Kb6 Kb8 19.Rh8#.

Using either method, it should take about 15-20 moves to deliver the mate. Theoretically, it should take no longer than 16 moves to checkmate, but depending on the position, one might have to use a mixture of the two techniques to do this.

Minor Piece Checkmates

If white has only one minor piece against a lone king, it is not possible to arrange the pieces so that the black king is checkmated. If white has three pieces, the mate is easy. As we shall see, with two bishops white's job is relatively easy, with a bishop and knight it is somewhat harder, and with two knights it is typically impossible.



White to play

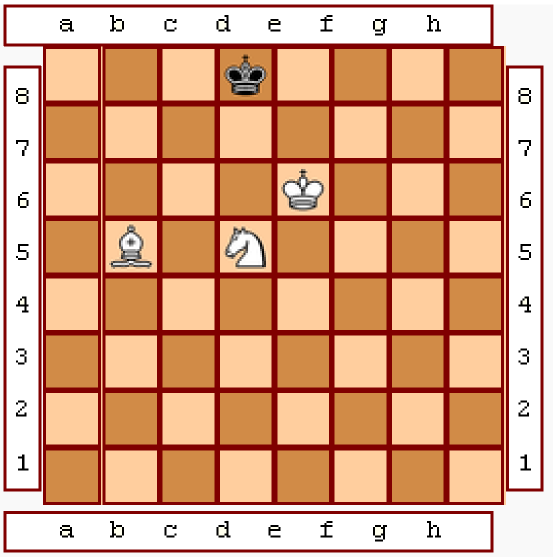
The diagram at left shows a mate in 6 with two bishops.

1. Bc2 Kf1 2. Bd2 Kg1 3. Kg3 Kf1 4. Bd3+ Kg1 5. Be3+ Kh1 6. Be4#

If on the third move, black plays, Kh1, instead of Kf1, white responds with the line: 4. Be1 Kg1 5. Bf2 Kh2 6. Be4++

One other possibility remains. If 5. Bf2 **Kf1**, then white should respond: 6. Bd3++

The bishops coordinate by taking adjacent diagonals, thus cutting off the opposing king.

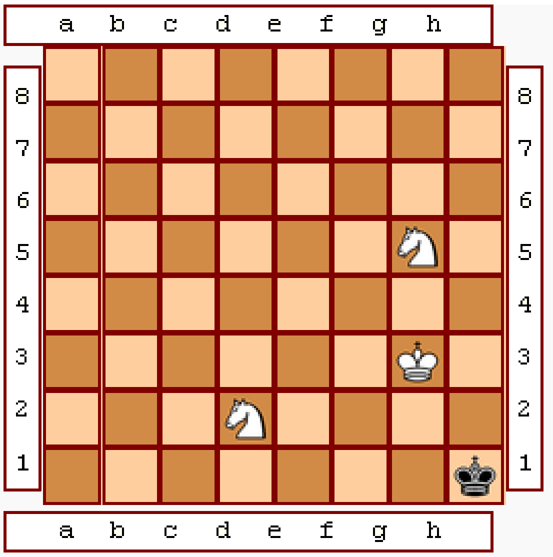


White to play

In order to mate with a bishop and knight, white must force black's king to the corner that is the same color as his bishop - in this case the a8 square. This is not so easy to do, because the bishop and knight do not coordinate well in cutting off the opponent's king. Mate can always be forced unless black can win a white piece, but, even with best play, the mate may take over 30 moves.

In the position at right, much of the hard work has already been done. Black is being pressed in the direction of the a8 corner. Nevertheless, nine more moves are required to mate.

1. Kd6 Kc8 2. Ke7 Kb7 3. Kd7 Kb8 4. Ba6 Ka7 5. Bc8 Kb8 6. Ne7 Ka7 (or 6. ... Ka8 7. Kc7 Ka7 8. Nc6+ Ka8 9. Bb7++) 7. Kc7 Ka8 8. Bb7+ Ka7 9. Nc6++



White to play

When white has two knights against a bare king, it is impossible to mate without cooperation from black. The diagram at left illustrates his predicament. The black king is cornered, but white has no way to force checkmate. Moving either Nf3, or moving Nh3 all lead to stalemate. White can try for 1. Ne4 Kg1 2. Nf3+ Kh1?? 3. Nf2++, but instead black plays 2. ... Kf1 3. Nd4 (otherwise black can play Ke2, and white must corner him again) Ke1 and white still has a challenge to confine the black king.

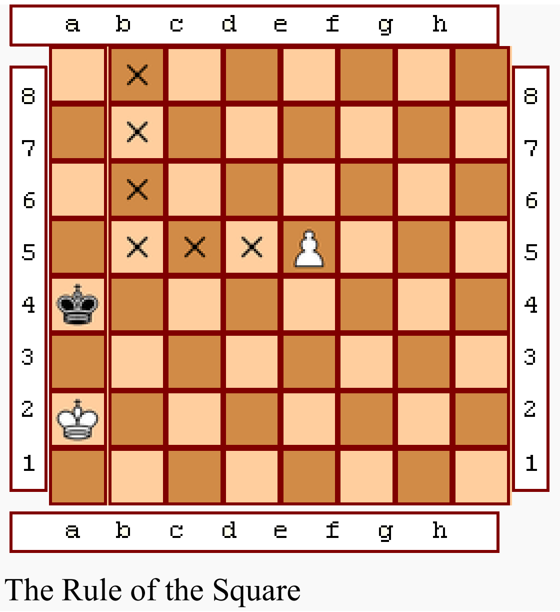
If black has one or more pawn, white may be able to win by cornering the black king with a king and one knight, and avoiding stalemate by letting black to advance his pawn, while the other knight administers mate. A number of such chess endings have been composed, some of which require as many 70 moves without a pawn move or capture. These compositions have some historic interest - they lead to the amendment of the "50 move draw rule" to exclude those positions in which it could be demonstrated that more moves were required.

Pawn Endings

Two important concepts in endgames only involving the kings and pawns are the **rule of the square** and the **opposition**.

A **passed pawn** is a pawn that cannot be stopped from queening by an opponent's pawn. If both sides have one or more passed pawns, then the player with a **protected passed pawn** (protected by another pawn) is likely to have an advantage. If neither side has a protected passed pawn, then the player with an **outside passed pawn** (farthest from the other pawns) will most likely win.

The Rule of the Square



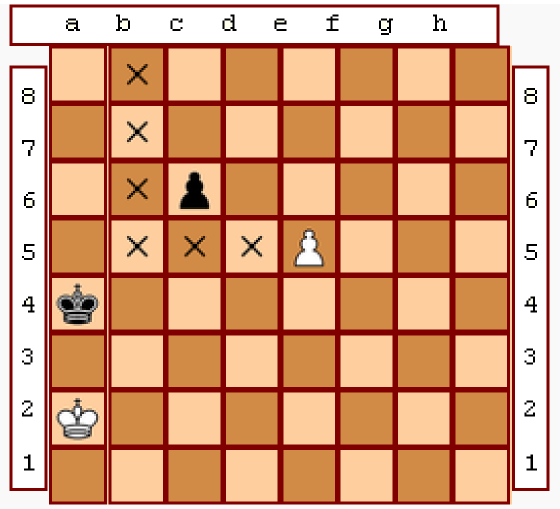
The Rule of the Square

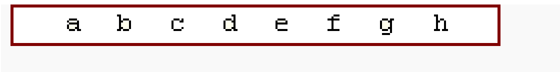
The **Rule of the Square** is used to determine whether or not a passed pawn can queen when it is not supported by its own king and the enemy king is chasing it. The idea is shown by the diagram on the right:

One side of the square is the line that extends from the pawn to the square on which it queens. The rule says: *if the enemy king can reach the square of the pawn, then it can capture the pawn; if not, the pawn can queen without the aid of its own king.* Remember that if the pawn is on its starting square, it can make a double step, so the square is the same as if the pawn has advanced one square. The rule is valid for all pawns, including rook's pawns.

So, in the diagram, if it's White's turn to move, then Black's king is outside the square and White can queen: **1.e6 Kb5 2.e7 Kc6 3.e8Q+.**

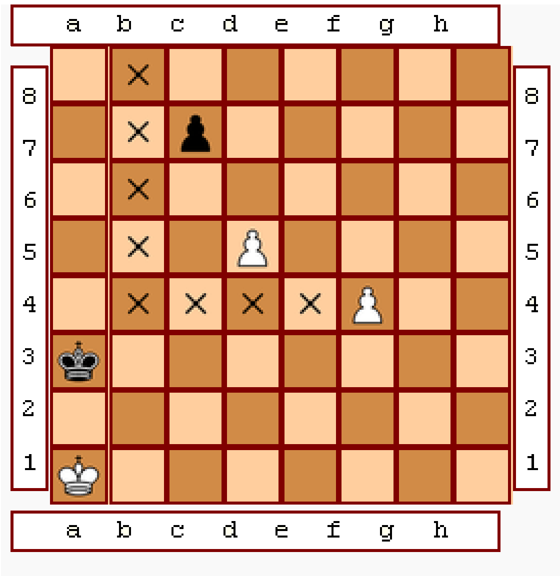
If Black is to play, the pawn can't escape the king: **1...Kb5! (moving into the square) 2.e6 Kc6 3.e7 Kd7 4.e8Q+ Kxe8 =.**





The rule assumes that there is nothing stopping the king from taking the shortest route to chase the pawn. If there are pawns that might get in the way of the king then the rule does not apply:

The position is the same as the first one, except that now there is a black pawn on c6. This pawn gets in the way of its own king, so that even if it's Black's turn to move he still loses: **1...Kb5** (1...c5 2.e6! and Black's king cannot get into the c8-c6-e6-e8 square) **2.e6 Kb6 3.e7 Kc7 4.e8Q.**

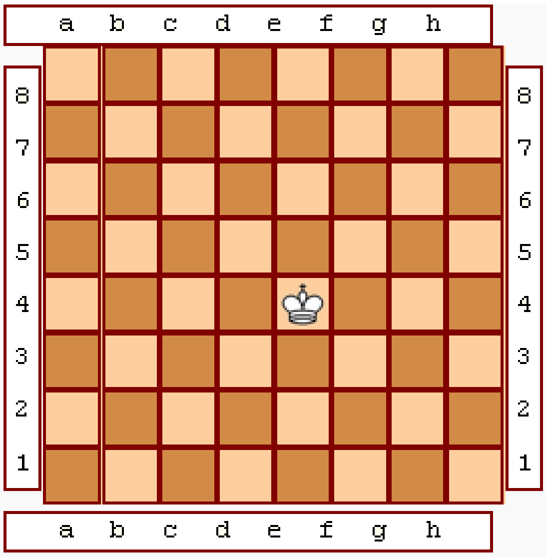


The rule of the square can form a basis for tactics. In the position on the right, Black to move played **1...Kb4**, entering the square of White's f-pawn. He thought that this would be good enough for a draw, but White played **2.d6!**. After **2...cxd6 3.f5** the effect of White's sacrifice is clear: he has decoyed Black's pawn to the a3-f8 diagonal, where it obstructs Black's king. Now White simply promotes the pawn and wins. Black had no other choice but to take White's d-pawn on his second move as otherwise it would have queened.

The Opposition

When the two Kings stand next to each other so that there is one square between them, they are said to oppose each other (or to be in **opposition**). Because the rules of chess say that the King can't step to a square next to the opposite King, there is an invisible wall between the Kings that makes it impossible for them to advance forwards.

The player who is not to move in such situation is said to have the opposition. Since his opponent can't move his King forwards, he has to move it sideways or backwards, and after that the other player gets to advance his King forwards, which is usually advantageous for him.

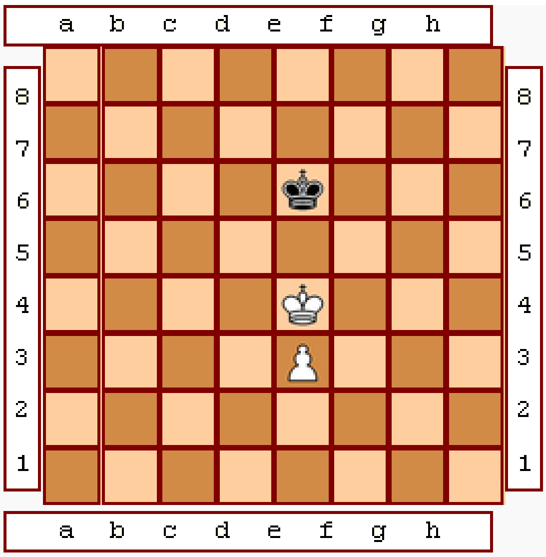


The kings are *in opposition*

Let's consider the very simple position on the right that illustrates the opposition:

If Black is to move, White has the opposition. Black can't move his King forwards, so he might play 1...Kd6 (1...Kf6 is the same in mirror image). Now the f5-square becomes available for the white King, so White's next move is 2. Kf5. If Black now moves his King to e7, White responds by moving his King to e5, when a position similar to the starting position has arisen, with the exception that the white King has advanced one square forwards and thus forced the black King to retreat one square.

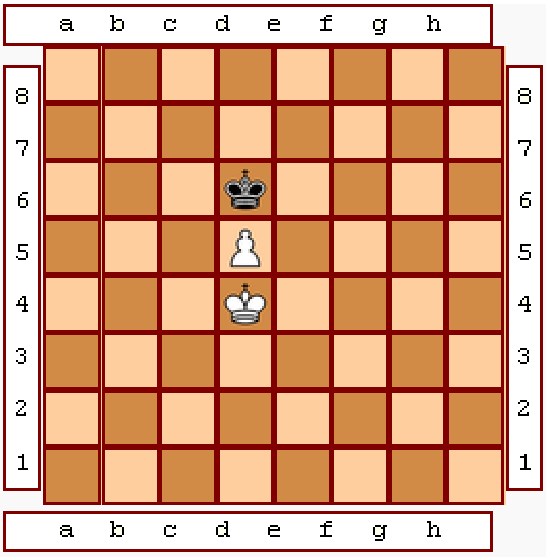
Now you might wonder what is the advantage of having the opposition. Let's add a Pawn to the previous position, and we get an example of how to queen the Pawn with the aid of the opposition (see diagram on right):



Black to move, White wins. White to move draws.

Now Black plays 1...Kd6, as in the previous example. White's first move is also the same, 2.Kf5, advancing his King forwards. The play might go on 2...Kd7 3.Kf6 Kd6. Now it seems that

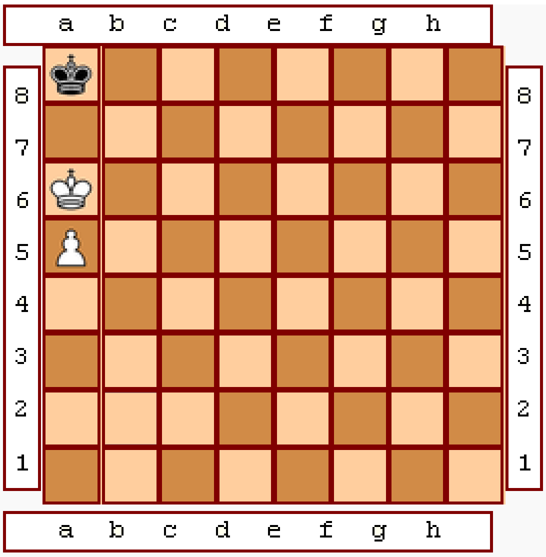
Black has the opposition, but we shouldn't forget that White doesn't have to move his King. Therefore the right move is 4.e4, when Black has to concede the opposition. Now White wins after 4...Kd7 5.e5 Ke8 6.Ke6 Kd8 7. Kf7 Kd7 8.e6+ Kd6 9.e7 and the Pawn queens next move.



Draw, whoever moves.

This position might look like a simple win with White to move as well. However, in this case, the game is drawn. Black has the opposition, and he can use it to block the Pawn (if he is careful and doesn't blunder the opposition away). Play could begin with 1.Kf4 Kf6 2. e4 Ke6!. This is the only move that holds the draw. In this kind of position, when the defending King can't oppose the enemy King, he must never move backwards. Instead he always has to move sideways, and always to the file on which the opponent's Pawn stands. If Black had now played 2...Ke7?, White would have gained the opposition with 3.Ke5, and won the game as in the previous example. After 2...Ke6 White has no way to force the Pawn through as long as Black carefully keeps the opposition. The play could continue 3.e5 Ke7 4.Kf5 Kf7 5.e6 Ke8 6.Kf6 Kf8 7.e7 Ke8 8.Ke6 stalemate.

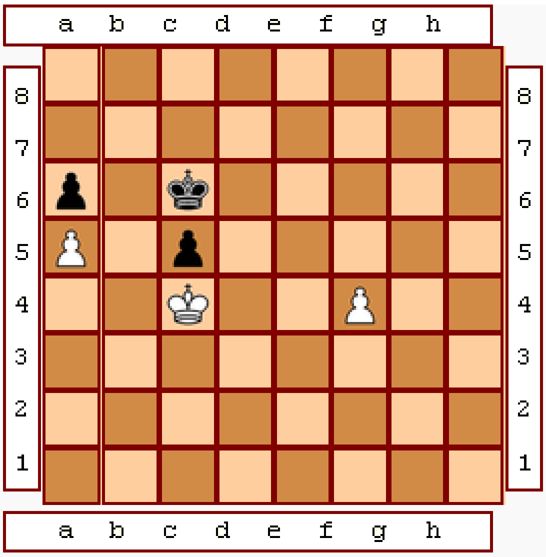
You need more than just a pawn and the opposition to win though. Take the position at right. Unlike the previous one, White's king is behind the pawn, and this is enough to ensure black a draw. Assuming black to move (so white has the opposition) the game might continue 1. ... Kd7 2. Kc5 Kc7 3. d6+ Kd7 4. Kd5 Kd8 5. Kc6 Kc8 6. d7+ Kd8 7. Kd6 stalemate.



Draw, whoever moves.

Even if one side has a pawn advantage, his king is in front of the pawn, and he has the opposition, it may not be enough to win. A notable exception is shown at right, namely the rook pawn. Unlike the previous case, there is nothing white can do to force black out of the corner - thus his pawn can never queen.

Outside Passed Pawn



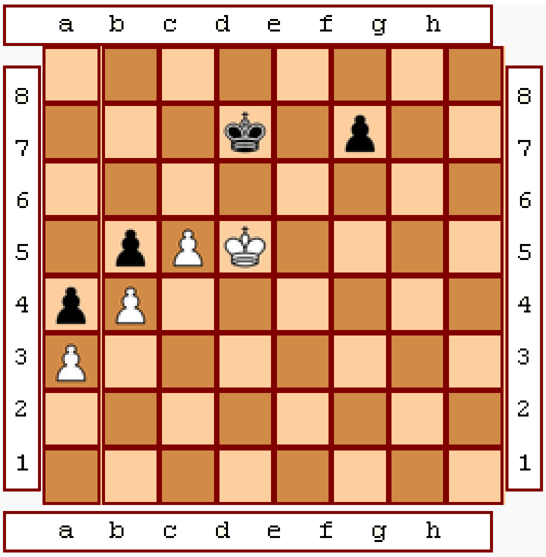
White wins.

The position at right is a good example of an outside passed pawn. It is not that the pawn is at the edge of the board - it is the fact that this pawn is far away from the other pawns, and acts as a decoy. It is often the case that in positions with an equal number of pawns that an outside passed pawn is sufficient advantage to win.

Take the position at right as an example. White advances his passed pawn, and when the black king is far away, he captures all the black pawns, and queens his remaining pawn.

1. f5 Kd6 2. f6 Ke6 3. Kxc5 Kxf6 4. Kb6 Ke6 5. Kxa6 Kd7 6. Kb7 and the pawn queens.

Protected Passed Pawn

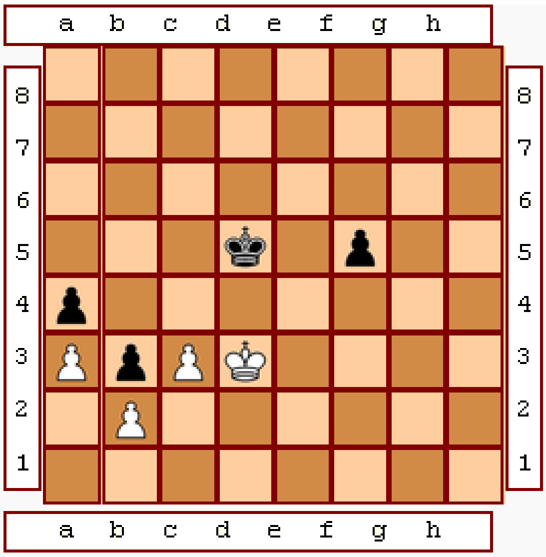


White wins.

White's c pawn is a protected passed pawn - enough to win in this position, even when black has an outside passed pawn. White could easily fritter away this advantage, and even lose, after 1. c6+?? Kc7 2. Kc5 f5 3. Kd5 f4 4. Ke4 Kxc6 5. Kxf5 Kd5 6. Ke3 Kc4 (the outside passed pawn prevailed). The correct strategy is for White to threaten the f pawn with his king, and then trade the c pawn for the f pawn in such a way that he gets the opposition. Black cannot counter by attacking White's other pawns, because then the c pawn will queen.

1. Ke5 Ke7 2. c6 Kd8 3. Kf6 Kc7 4. Kxf7 Kxc6 5. Ke6 Kc7 6. Kd5 Kb6 7. Kd6 Kb7 8. Kc5 Ka6 9. Kc6 wins both pawns

Probably better is the fighting alternative 1. Ke5 Kc6 2. Kf6 Kd5 3. Kxf7 Kc4 4. c6 Kb3 5. c7 Kxa3 6. c8/Q Kxb4 7. Qe6 but white has no trouble stopping the black pawns and mating.



Draw.

If the protected passed pawn is not so far advanced, it confers less of an advantage. The position at right, which has most of the pieces moved back two rows, actually provides Black with a slight advantage, but not enough to win against best defense. Black uses his outside passed pawn as a decoy, and then queens his b pawn, while white queens his c pawn.

1. Ke3 Kc4 2. Ke2 (trying to stop black from penetrating) f4 3. Kd2 f3 4. Ke3 f2 5. Kxf2 Kd3 6. Kf3 Kc2 7. c4 Kxb2 8. c5 Kxa3 9. c6 b2 10. c7 b1/Q 11. c8/Q

Black is a pawn up in an ending with queens on the board. Black has an opportunity to play for a win, but such endings are generally drawn.

External Links

- View endgames involving the King+Knight+Pawn vs. King+Knight+Pawn
- View endgames involving the King+Pawn vs. King+Pawn
- View endgames involving the King+Queen+Pawn vs. King+Queen+Pawn
- View endgames involving the King+Rook+Pawn vs. King+Rook+Pawn
- View endgames involving the King+Bishop+Pawn vs. King+Bishop+Pawn

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